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THE MICHIGAN FARMER,

A WEEKLY JOURNAL OF AFFAIRS

Relating to the Farm, the Garden, and the Household.

NEW SERIES.

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The Farm.

On the Structure and Properties of Wool.
The effects produced by crossing the breed of sheep considered, and practically demonstrated.

BY HENRY GOADBY, M. D.
PROFESSOR OF VEGETABLE AND ANIMAL PHYSIOLOGY, AND ENTOMOLOGY, IN THE STATE AGRICULTURAL COLLEGE OF MICHIGAN

[Copyright secured Jan. 12, 1859.]

A specimen of the Leicestershire wool was submitted to this experiment, and at the end of half an hour it exhibited the very extraordinary appearance represented in figure 4.

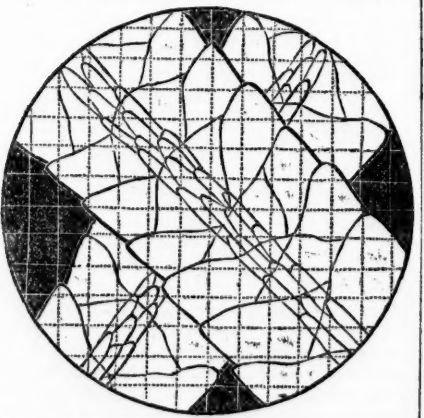


Fig. 4. Leicester Wool treated with caustic soda, and magnified under the microscope.

Although every scale was distinctly seen, the lines of demarcation were faint, and the transparency of the wool so complete, that the micrometer was everywhere visible.

Now continue the maceration, for an increased period of time, and other, and still more curious appearances will present themselves; the blackness seen by unassisted vision, resolves itself into a lightish brown, under the microscope. A cortical substance, with well defined longitudinal lines—scarcely differing from the same tissue in human hair, is now made apparent; and more than all, a central axis, or medulla is clearly distinguishable in every hair. The medulla is composed of a dense assemblage of transparent cells longer in their longitudinal than in their transverse diameter. In the human hair these cells as before described secrete a pig-

ment, which gives color to the tissue, but in wool they are remarkable for their utter transparency. This medulla, with its cells, is shown in fig. 4, which as compared with the unsophisticated specimen of the same wool (Leicestershire) will be found considerably enlarged; this is solely due, to the action of the caustic soda.

The only satisfactory mode of examining the hairs of animals is by transverse section; although extremely difficult and tedious to make, requiring the close application and constant labor of many hours, yet when satisfactory preparations result, they amply repay for the expenditure of time and skill necessarily involved in their production. A singularly fortunate transverse section was obtained from a specimen of the Leicestershire wool, which, although it lasted long enough to have a faithful drawing made of it, could not be preserved as a preparation. Examined by the same magnifying power with all the rest of the wools, it will be seen, that under the influence of the caustic soda its size is perfectly colossal; the normal wool measured four squares of the micrometer—this section measures exactly seven squares, fig. 5.

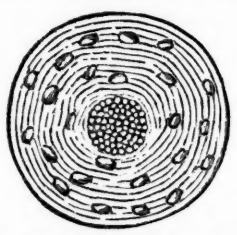


Fig. 5. Transverse section of the fibre of Leicester wool.

The dark line, which forms the periphery of the circumference is the outer cuticular layer; immediately within this is the cortical substance, containing a great number of oval cells, each one possessing a faintly colored nucleated spot; the round ring in the centre of the section shows the medulla, or central axis, its interior filled with the transparent cells already described, and which seen transversely are nearly round: the entire figure of the section is almost spherical throughout its surface, rendering it extremely easy to count the squares, which describe its dimensions, and make a drawing of great exactness.

As it may be interesting to the reader to be made acquainted with the plan pursued to obtain rigidly accurate drawings of the preparations represented, the following account of it may be acceptable: A piece of glass has been ruled with a diamond point, with 24 lines, the one hundredth of an inch apart; the glass is now turned exactly at right angles, and another series of lines, of the same number and description, are ruled in this direction. The result is a system of delicate squares, of known value, and in every respect equi-distant; this is called an micrometer, from two Greek words, which signify to measure minute things. The glass, thus prepared, is fitted into the eye piece of the microscope; in this situation it is entirely useless as a means by which to measure the object, because they are far removed from each other, and the object is not seen, but only the magnified image of it. But for the purpose for which it was employed on this occasion, and for many other important uses, such an instrument so applied is a very valuable adjunct. When thus arranged, and an object placed in the microscope for examination, the micrometer, which is really close to the spectator, appears to be beneath the object, and if it should chance to possess any opacity, the lines are completely obliterated, which greatly favors the illusion. The artist now proceeds to rule his paper, with squares of the exact size of those he sees in the microscope, and proceeds to make his drawing. If a fibre of wool should measure exactly one square in the micrometer, such as actually occurred with some of the illustrations, he makes his drawing one square of his ruled paper; if, like the Leicestershire wool, it should measure four squares, he follows the same rule, and so with the rest.

By the same means, he is enabled accurately to measure, and faithfully to record the imbrications, and thus a drawing, of remarkable fidelity, can be expeditiously made. This explanation will be easily understood by reference to fig. 4.

The attempt to examine black wool under the microscope without the aid of re-agents will end in failure. A coarse strong wool of this description (breed unknown) was submit-

ted to examination; it was found to be remarkably strong and so intensely black, and opaque, that not a ray of light could be transmitted through it. Subsequently it was mounted in Canada balsam, which communicated just sufficient transparency to render it accessible to observation; it is shown in fig. 6.

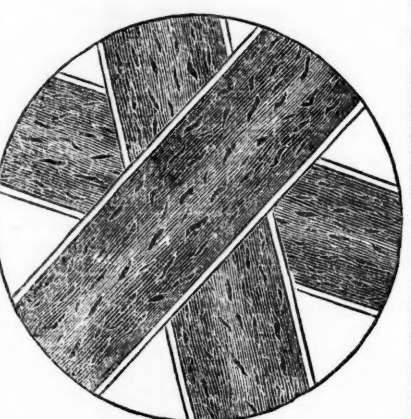


Fig. 6. A specimen of black wool as seen under the microscope.

When human hair is prepared in this material it permeates the cuticular layer, and renders the epidermic scales, which enter into its composition so transparent, that they become quite invisible. The cortical layer, however, with its longitudinal striations, and interrupted streaks of pigment is always remarkably well shown, and the medulla is rendered visible. Strange to say, black wool exhibits a nearer approach to a well defined cortical substance than any other variety of wool. So like it in fact, that any one might be excused for mistaking it for a preparation of human hair; moreover this wool decidedly establishes two distinct layers—the cortical layer, with its well marked characteristics, and a transparent cuticular covering, which surrounds it.

The reason that some wools are black—either confined to the face, or extending all over the body, is most likely due to the operation of the same law, which gives an intensely black hair to the full-blooded Indian, and to the Negro, namely, the pigment secreting capabilities of the epidermic scales.

A preparation of a white wool (Old Seventy) was mounted in Canada balsam, a representation of which is given at fig. 7;

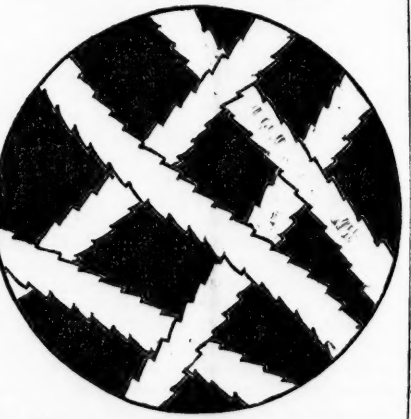


Fig. 7. Wool of "Old Seventy" as seen when mounted in Canada Balsam.

it has become so utterly transparent, that all trace of imbrications is entirely lost, the only trace of them that remains, consists of the serratures, on the external margins, which appear to be very slightly thickened.

Two important elements appear to be necessary, to constitute a good and perfect wool, these are the possession of decided and well formed imbrications, and hairs of the same uniform diameter throughout their length. In many of the specimens examined, the imbrications were scarcely distinguishable, whilst in others they were almost obliterated. The wool that took the first premium, at the State Agricultural Fair of Michigan for the year 1856 was perfectly smooth—therefore worthless, whilst an extremely beautiful wool was awarded the second premium, and another specimen—incomparably the finest on exhibition—received nothing. The worthless wool, doubtless, felt smooth and even to the touch, and conveyed an idea of fineness that did not exist, as it was coarser than the wool that received the second premium. It is presumed that the loss of imbrications and consequent smoothness of the wool arises from one or more of the following circumstances: age, want of condition, inferior health, or breeding owes—whether these opinions be correct or not, every practical farmer is much better

able to determine, than one who sits in his study and who knows no more of the subject than his microscope teaches him. But as the laws of Physiology are of universal application, it seems fair to assume, that some of the reasons indicated must have contributed to the end produced. A large proportion of the wools forwarded for examination were taken from ewes, many of them were extremely beautiful—some of them of pure blood quite perfect; on the other hand many were so bad that they formed the worst samples contributed; as a rule, the poorest and worst sample is always obtained from an ewe.

The wools hitherto received, have been taken either from bucks or ewes—there has been a dearth of illustrations from wether sheep; this is much to be regretted as a presumption exists, that their wool would exhibit much general uniformity.

The great value and importance of the imbricated structure of wool, is in this wise: by means of the scales, one hair impinges upon, and clings to another, and several of them mat or felt, thus forming a tissue, so firm, that it cannot be broken up or separated. This fact was constantly exhibited, in the wools sent for examination, where nearly every specimen had more or less "matted," and neighboring wools, differing in number and kind had frequently formed an inextricable tissue. Another fact will be equally obvious, namely, that the finer the wool, and the greater the number of imbrications in a given space, the finer, firmer, closer and better, must the fabric be, in the construction of which such wools are employed. Where thick, warm, winter clothing and blankets are required, nothing can exceed the fitness of the Southdown, or the still more magnificent Leicestershire, with its beautiful and unequalled long staple. By means of similar imbrications human hair matts or felts as much as wool, in careless and dirty persons, especially amongst the lowest classes of society, who seldom or never use a comb, the hair becomes so perfectly matted that no comb can be made to pass through it; the once celebrated "Dirty Dibb" (Nathaniel Bentley) of Leadenhall St. London, made no use of a comb for many years, till his hair became felted into a tissue so firm and compact, that the attempt to use such an instrument was utterly impossible—as well might one try to comb a coat into its original elementary fibres. A lady (Mrs. L.) in the State of Michigan who possessed hair of unusual length and beauty, was confined to her bed for two weeks, by illness, during this time her hair received no attention; when she recovered it was found to be perfectly impracticable to pass a comb through it, and with many regrets she was doomed to have it all cut off. Facts of this kind might be multiplied to a larger extent, but enough has been said to show the function and properties of imbricated scales, whether on hair or wool.

The Rules of the State Agricultural Society—Swine.

Mr. J. S. Tibbits, of Plymouth, in his letter, published in the December number of the MICHIGAN FARMER, discusses certain awards made on swine at the late annual exhibition of the Society. In that number we had not space to refer to the point called up; it is one which certainly deserves attention. The case of Dr. Gardner, referred to, is as follows:—He brought to the exhibition a litter of grade pigs, four in number, which he entered for the premium given for "the best lot of grade pigs, not less than four and under ten months." One from the lot thus entered, the owner selected and entered for the premium offered for the "best grade boar, over six months and under one year;" and another of the lot was entered for a premium as the "best sow, over six months and under one year." The second premium was awarded to the lot; the first premium was awarded to the boar, and also to the sow, entered as above related; causing the fact, stated by Mr. Tibbits, that three premiums were given, altogether, on the four pigs. The question arises, could this be done under the rule? The rule says:—"No animal or article shall take more than one premium, except as specially provided." The premium list evidently provides special premiums for pigs of certain ages, and also for a lot, and though a pig may form part of a lot, it certainly does not draw the premium given to the litter. In support of the decision at which Mr. Tibbits has arrived, he cites

the practices of a late Horticultural Society, as given by the late Secretary of the State Society. But to show that this practice did not govern the Horticultural department of the State Society, whilst Mr. J. C. Holmes was in office, and that this really was not practiced, we may here cite the fact, that to P. Dennoyers, Esq., was awarded the premium for the best collection of vegetables in 1857, and again he was awarded the first premium on the lot of carrots which formed a part of the said collection.

Mr. Tibbits further states that the Secretaries of the New-York and Ohio State Agricultural Societies have informed him that no such awards are allowed by their respective societies. That the Secretaries have given such information to Mr. Tibbits, we do not doubt; but we think they have done so unadvisedly. In the case of the New-York State Society, the whole subject is left without any rule whatever referring to it, so that we may readily presume, as there is no rule forbidding one of a prize litter competing for a single prize, it is permitted. In the Ohio rules there is a distinct provision, as follows:—"An animal entered for exhibition in one class, cannot compete for a premium in another, except as follows: A single horse may be exhibited as one of a pair, a single animal may be exhibited as one of a herd; a single ox may be exhibited as one of a yoke, or as one of three or five, a single colt may be exhibited as one of five, the get of one sire." It will therefore be seen that the information given by the Secretaries of the Societies named, was not in accordance with their rules, either in principle or in fact.

Let us now look at the question on its merits. Should one of a litter or lot of pigs, entered to be shown in such lot or litter, be debarred from competition, as a single animal, in any class in which it may be entitled, by age or condition, to compete? This is the main question; and whilst we give our opinion on the subject, we have not the least objection to hear it discussed, or to be proved to be in the wrong, if satisfactory reasons are given. We do not think that the mere fact of the ability of one man to draw more than one premium, upon one animal, is a sufficient objection. It does not hold good with horses and cattle, why should it hold good with swine? In fact, the hog is the only domestic animal used for food that brings forth its young in litters, and if one or two animals of any litter are so superior that they are worthy of prizes, should they be debarred the privilege? We think not. The litter is shown as much to exhibit the superiority of the parents as their progeny, and were litters to be compared and judged, would it be right or just to cut off two or three members of one of the litters competing, because they had had the good fortune to be placed in a position to compete with single animals whose owners assumed they were their equals, or superiors. A litter of pigs, and a pen of lambs are different things, and so is a herd of young cattle. Every individual of the pen, or herd, is supposed to come from different parents; but in the case of the pigs, the litter is all from the same dam. So that if the prohibition against single animals being entered by themselves and in a litter, at the same fair, be enforced, it would be a manifest injustice to the breeder, especially where his stock consists of but a single brood animal, as is the case in most instances in this State.—Mr. T. says that had he known this reading of the rule he might have borne off many more premiums than what he has done, with fewer animals. No one is entitled to more of the prizes than Mr. Tibbits, for none have done more to introduce the improved breeds of swine into this State; but though he might have drawn more prizes with fewer animals, he might not have drawn more premiums.

To prevent misunderstanding in the future, however, the premium list in the class of swine, should prescribe the minimum number, to be comprised in litters and lots, allowed to compete; whether a lot should be of animals of one litter or more; their ages, and their ability to compete in other classes, and if in any, what they are. This would settle all doubts on this point for the succeeding exhibition; and this has been so settled, as will be seen by the new premium list.

It has been estimated by Dr. Lee, of Georgia, that the annual income of the soil of not less than one hundred millions of acres of land in the United States is diminish at the rate of ten cents an acre.

Report of the President of the Agricultural College.

AGRICULTURAL COLLEGE,
Lansing, Mich., Dec. 1st, 1858.
To the Board of Education of the State of Michigan:

In reply to the first branch of the foregoing resolution of inquiry, I submit the Report of the Treasurer, Prof. T. C. Abbot, of receipts and expenditures from April 1, 1858, to Dec. 1, 1858, marked A. The following is an abstract.

Balance received from former Treasurer, on hand April 1, 1858.....\$13 21
Collected by former and paid to present Treasurer, May 26, 1858, when he entered upon his duties, 42 46
Received from Board of Education 6,000 00
Balances from Students, being difference between cost of board charged and amount credited for labor.....1,946 83
Rents of Houses occupied by Professors 408 83
From all other sources.....580 06
\$8,990 89
Expenditures for same period, for which my warrants, countersigned by the Secretary, have been drawn.....8,690 08

Leaving in Treasury Dec. 1, 1858.....\$300 81
Vouchers for each and every expenditure are duly filed in the office of the Secretary of the Institution, subject to the inspection of your Board and the public.

Balances from the students which will become due near the termination of the present term, may be estimated at \$1,000, liable to be diminished from unforeseen causes.—This estimate is on the presumption that the Institution remains full. The receipts will probably equal in amount (omitting salaries) the current expenditures of the term, but the expenses will be incurred before the balances are paid.

I submit herewith statement marked B, which exhibits indebtedness to date, and amounts due for salaries of Professors, Steward and Farmer, to Jan. 1, 1859.

The aggregate amount is \$5,749 78.

If your inquiry is intended to comprehend the amount placed to the credit of the Treasurer, T. C. Abbot, by your Board, \$6,000, and also \$1,622 95 placed to the credit of J. C. Holmes, Treasurer before April 1, 1858, the aggregate amount of indebtedness will appear to be \$13,472 73.

In regard to repairs, the boarding house will demand a new roof, and must be replastered throughout. The principal College building must be kept in good condition. The dwelling houses will require no repairs.—I should place an approximate estimate of amount demanded for these purposes at \$4,000.

Whether more Professors are demanded depends upon the policy pursued. If the thorough Four Years Course of study is adopted, which your Board have recommended, and the public expect, the necessities of the Institution demand that the chair of Natural Science be filled by the commencement of the next term. A Professor of Civil Engineering, whose range of duties, however, should not be limited by what would be technically included in such a Professorship, will be required at the same time. At the beginning of the winter term, next December, the services of the Professor of Animal and Vegetable Physiology and Entomology, will be demanded. At the same time, it is perhaps necessary that a Professor of Intellectual and Moral Philosophy be chosen, with the understanding that instruction in Political Economy, and such other English branches as can not be embraced within the range of the duties of the Professor of English Literature, shall be confided to him.

The Professors named, seemed more imperatively required by the existing exigencies of the Institution than others before Jan. 1, 1861. But there are other Professorships equally indispensable in the future development of the Institution.

A Veterinary Professorship is fundamental to very idea of an Agricultural College. As an illustration of the difficulties in the acquisition of the knowledge of the Science and Art of Veterinary Surgery, it may be mentioned that the charge by an eminent practitioner in the Eastern States, is one hundred dollars for tuition for four months, and two hundred dollars for double that period. Stock breeding and raising is impossible till the Farm is cleared and possesses a sufficiency of pasture and meadow land. Hence this Professorship can, for the present, be postponed.

Horticulture, the Professorship of which has been suspended in the present immature and uncultivated condition of the Farm, should engage largely the attention of the Institution as soon as it can be profitably pursued. It is a kind of culture, where not only an abundance of knowledge, involving the most profound and interesting principles of science, and the most delicate skill, can be taught, but where the peculiar labor of the ingenious and inquisitive student, whose intelligence outruns his physical capacity, can be employed most successfully for the Institution. In the enumeration of Professorships, therefore, for such an Institution, that of Horticulture should be in due time embraced.

The Institution will require a Professor of Political Economy, within the range of whose duties may be embraced Rural Economy and Household Economy, instruction in regard to the application and results of capital and labor upon the farm and in the kitchen, as well as in the wider sphere of communities and nations.

The application of science to the Mechanic Arts, including especially the economy of machinery and farm implements, should be embraced in a special Professorship of Technology, though perhaps for the present, the duties may be required of a Professor of Civil Engineering.

If it shall become the policy of the State to appoint a State Geologist, in order to disclose more searchingly than has ever been done, the incalculable wealth and resources hidden within her bosom, it is worth consideration whether he should not be a Professor in the Institution, and most appropriately publish the results of his investigations from the Agricultural College of the State.

Such a map as your request demands, would require a Topographical survey, and involve the necessity of more time, means and professional skill, than at this season are at our ready disposal. I therefore furnish a diagram for present reference.

In considering your sixth query, I will proceed first to state what buildings seem indispensably necessary, without reference to the accommodation of any additional number of students.

The building at present occupied as a barn is not adequate, and was never designed for the uses to which it is applied. It is a brick building 28 by 40 feet, with basement, ground floor and loft. In case of the erection of a new farm barn, the building in question will become convenient to the premises.—There is immediate necessity for room similar to the basement for root crops. The ground floor would supply a tool house, of which the farm is yet destitute; and the loft, for the present, can be converted profitably into a workshop.

It is obvious that in the construction of barns, their design, arrangement, and cost, must be as various as the positions in which they are erected, and the tastes and dissimilar crops of their respective owners. In the construction of a barn for this estate, all plans must be subordinate to the peculiar case. The barn is for an Agricultural College, and as it will be the duty and mission of the Institution to inculcate the great truth fundamental to all Agricultural success, that every thing of an animal or vegetable nature abstracted from the soil, or its equivalent, must be restored to it, no barn should be constructed upon the property, which does not provide for the preservation in compost, of all manure solid and liquid, under cover, in such relative position to stock, as not to be noxious or destructive to health, and in such manner that its volatile elements can be arrested by cheap substances for which they have an affinity. The preservation and perpetuation of health, being another vital idea which will be inculcated, it seems necessary that the barn should be easily lighted, dry, well ventilated, and constantly supplied with pure water. As the business of the estate must be various and extensive, the barn should be comprehensive, and any structural plan adopted, should be capable of expansion, and the barn at option be built entire, or in sections, to meet the increasing wants of the estate. A poor barn is the poorest economy for an individual, and would be still more suicidal for a State institution. It should be built with all the plainness and cheapness compatible with durability, and the objects for which it is designed, that if possible it may prove a model of its kind.

A very commodious barn of wood, 100 ft. by 50 feet, widened with a tier of stables the whole length on each side, flanked with extensive sheds, supplied with two cisterns, every way thoroughly finished, and capable of accommodating eighty head of stock, received the first premium of the New York State Agricultural Society. Such a barn cost the proprietor \$3,000. It was destitute, however, of adequate facilities for preservation of manure, and also cellars for root crops. On the other hand it was somewhat larger, perhaps, than we should immediately require. It was erected where labor and material would cost about the same as with us. Taking this model barn as a criterion, the cost of a wooden one necessary for our present uses may be estimated at \$3,000.

Barns, sheds, and fences are required for each of the four dwelling houses erected for professors, and also for the small house at the east end of the farm, occupied by the farmer. The dwelling house, nearly completed, should be finished. An appropriation of \$2,000 would probably be sufficient for these objects.

If the policy should be resolved upon, of erecting all buildings on the estate of brick, so that they may be in conformity to each other, it may be deemed advisable to erect barns more permanently and durably. If so, larger sums would be required.

In considering the question of the accommodation of two hundred students, it becomes apparent that neither the dining hall, nor the wash rooms, where students exchange their working clothes for citizen's garb, nor the kitchen and its appurtenances, are adequate for the increased number. It is equally apparent that the present conveniences can not be enlarged in their existing position and connection. At the same time, in the present boarding hall, four students are placed in each room together, an arrangement at war with every scientific truth, and with all the natural laws we inculcate relative to the preservation of health. If changed entirely into dormitories, two students in each room, it would accommodate fifty-four, one room being reserved for a Professor, and another for a reception room. The rooms were originally designed for two, but have been so far occupied by four persons each.

Experience is already conclusive to prove, that the best interests of the institution require that the dining hall, kitchen, and accommodations for all persons connected with the culinary department, should be in a separate building from that occupied by the students. A building, therefore, might be erected for these united purposes. In the selection of its site, and in its arrangements and construction, reference should be had, as it should in all future buildings on the estate, to the vital idea, which seems to have been

forgotten in the construction of the present buildings, that all organic matter, all fertilizing substances, must be preserved. A building for the purposes named, should be capable of extension or elongation, without change of general plan, and therefore without expense, except in proportion to increased accommodations. Indeed, if such a building is erected, it should be capacious enough for dining halls and kitchens for double the number it is designed to accommodate. Occasions may arise when double that number must be provided for. Experience has already taught us also, that the washing-rooms and stalls for exchange of clothing, should be ample, easily penetrated by a flood of air and light, and exposed to examination of visitors. The ground floor might be appropriated to kitchens and wash-rooms, the second floor to dining hall and closets, and a third story to the steward's family, and employees.

It would then remain to provide rooms for one hundred and forty-six students, and perhaps three Professors in a new hall. In no case should more than two students occupy one room.

For any person not a professional builder or architect, to estimate the cost of such buildings, would be an impossibility. The recent rapid improvements in contrivances for lighting, heating, ventilation, supply and distribution of water, drainage, and also in appliances for cooking, have been so great, that no plans should be adopted, which have not been prepared by an experienced and skillful architect on the spot, after he has personally examined the sites, and made himself perfectly familiar with the purposes to be subserved, and practical objects to be effected, and any plan once adopted should be inflexibly adhered to.

Should the construction of buildings be commenced every tenable spot on the premises should be sought for accommodation of workmen. It is necessary that the duties of students, and their routine of life, should be infringed upon as little as possible. The encroachments of persons having little sympathy with their pursuits, must have a tendency to distract attention. Inasmuch as the room would all be sought for, additional students may be received. It would be better for students to be crowded by each other than by strangers. In that case our own students and teams would afford efficient aid in the construction of new buildings. Team work can be done by students, and much of the labor in and about the building, not requiring mechanical skill, can be performed by them. Thus, not only can the organization of the Institution be preserved undisturbed, but the buildings be more economically erected. I am aware that the proposition to aid in such various and formidable work with students, will be viewed with incredulity; but guided by tests and experience we feel entire confidence that efficient and very profitable assistance can be rendered.

In case it is determined to prepare for reception of two hundred students, the farm barn should be erected the approaching season. The cooking, washing, and dining hall should also be erected by the time the next winter term commences. During the vacation of six weeks, the present Boarding hall could be entirely changed into dormitories, and additional students could be supplied thereafter with more comfortable accommodations. The barns for the dwelling houses might also be erected the coming season. For the commencement of structures, the Institution has 280,000 brick now on hand.

During the summer, brick enough could be manufactured for the completion of all brick buildings demanded by the increased number of students. Preparation of designs and materials, and employment of skillful workmen being done with entire deliberation, the hall for students could be commenced in early spring, and be ready for occupation the winter term of 1860.

Not only should the plans of important and permanent structures be adopted by your Board, and inexorably adhered to, but the foremen should be directly employed by them, the Executive of the Institution preventing any violation of contract, or any interference with or interruption of the discipline or progress of the Institution by any employee. This was the course pursued in the erection of dwelling houses the last season.

The erection of the first buildings upon the estate was attended by a series of calamities and misfortunes. With superior facilities now afforded, the design and practical use of each improvement understood with distinctness, the Institution itself being able to supply a large proportion of aid and material, when labor and food are diminished in value, I have no fears, but that additional buildings can be erected with as much economy as any heretofore constructed by the State for any public use.

The most eligible spot for the chief farm barn, appears to be in the rear of the present Boarding House, on the terrace above the overflowed banks of the Cedar river, from which the stream is easily accessible, a site at the same time conveniently near to the lodgings of the students.

Whatever sites for other buildings may be deemed most eligible on a cursory examination of the grounds, they might all be changed on a more critical examination, by architects employed. Fitness and economy must rule the location.

Having in view the expositions made above I submit, marked C, a list of appropriations necessary, if the views expressed were adopted.

Although, not specially requested in your resolution, I herewith submit, marked D, an enumeration of the real and personal property belonging to the Agricultural College, as it embraces an aggregate hardly appreciated without a formal examination.

In reply to the clause of your resolution, requesting general suggestions, I would call your attention specially to my report of the first of April last, which embraces a history of the progress of the Institution from the time it was dedicated to that date.

Educationally, the Institution continues to be successful, if rapid acquisitions on the part of the students, a laudable observance of the rules and regulations, good morals, abstinence from vicious habits, and an earnest zeal in availing themselves of the peculiar and signal advantages afforded, are evidences of success. The use of tobacco is almost entirely abandoned. No spirituous liquors are ever found upon the place. No games of hazard are tolerated. It has been only at long intervals that a student has been reprimanded for want of punctuality in his field labors.—In fact, none of those habits and vices exist, which usually distract the energies, degrade the morals, and injure the health of students. In this connection, I herewith submit the rules and regulations of the Institution now in operation, marked E.

The most advanced class in the Institution have concluded, under Prof. Fisk, a course of Experimental, Agricultural and Analytical Chemistry. In Mathematics, they have pursued under Prof. Tracy, Algebra, Geometry, Plane and Spherical Trigonometry with their application to Surveying, Leveling, &c. In English Literature, under Prof. Abbot, they have studied Analysis of the English Sentence, Rhetoric, Ancient History, and the nature and use of Arguments.

The past season has been a most unpropitious one for farm labor. Thirty of forty-two consecutive days in the early part of the season were rainy. It was, therefore almost impossible to get seed into the earth. A large portion of what was planted by our neighbors, rotted in the ground. In several instances, our own seed was twice planted. Our corn-field was infested with pigeons and squirrels. At a later period we were visited by a severe drought.

But in spite of all these difficulties our crops have been successful, though moderate. It is sufficient to say, they averaged larger than those of our neighbors. The wheat crop of the vicinity was almost entirely cut off by the midge and rust. The average was not over six bushels per acre. Our own crop was about eleven bushels per acre. Of corn, our crop was twenty six bushels per acre, and of potatoes, one hundred and twenty-five bushels per acre. The productions on the estate the present season have been three hundred and sixteen bushels of wheat, seven hundred bushels of corn, sixty-five bushels of barley, five hundred bushels of oats, one thousand bushels of potatoes, forty bushels of beans, five hundred bushels of turnips, and a large quantity of vegetables, sufficient to supply our tables abundantly for about six months.

It may be mentioned that the products of field and garden, each and all, were of the finest description as to quality. As an evidence of successful culture, it may be adduced, that a portion of the garden planted to potatoes expressly for early use of the table, produced at the rate of two hundred and eighty bushels per acre on the poorest sandy soil of the farm, high cultivation triumphing over excessive rains, and drought, and poverty of soil. Continual and thorough hoeing, even when our garden and fields were parched like ashes, secured a sustained and vigorous growth, and saved crops that otherwise would have been lost, impressing the vital lesson that high culture is a guaranty against drought.

During the summer term of twenty-nine weeks, a large amount of labor was performed in spite of difficulties, and the afflictions incident to the country and the peculiar season. A large number of the students were compelled to leave the Institution in consequence of sickness, and many who remained were invalids. At one time, but about thirty were in the field, and as each was employed but three hours, they were not equal to eight able bodied men. The discouragement was almost equally severe for several weeks, and extended with more or less severity over a period of three months.

During the summer, 100 acres of heavy timbered land have been logged and cleared. Stumps have been extracted, mostly by Willis's Stump Machine, from eighteen acres of land. One mile and a half of tile drain has been laid, some of it through quicksands, and through places presenting formidable obstacles to drainage. Students did not shrink even from this labor. Land where the water had stood from time immemorial at depths varying from one to three feet on the surface, is now brought under cultivation and produced good crops of corn and turnips the past season. Twenty-nine acres of wheat were harvested and threshed. The areas planted to spring crops were as follows:—Corn, 23 acres; Barley and Oats, 30 acres, which was sown to Clover; Potatoes, 8 acres; Beans, 2 acres; Turnips, 1½ acres, and Garden, 5 acres. We have in Wheat 35 acres, which now promises well. We invite a comparison with any wheat upon new land in the State. Orchards have been commenced, and 400 trees set out, of a few varieties sanctioned by experience and tested in our latitude, most of which were transplanted from a nursery of high reputation in New York. The grounds around the dwelling houses were put in good condition, and 100 ornamental trees set out. Work has been performed on the public road leading to and through the estate. Three hundred cords of wood have been sawed and split. The repairing in wood during the term was done by students skilled in the use of tools. The horses, oxen and cows have been in charge of students specially detailed to these respective trusts and having in charge an average of twenty-two animals, not a single one has been lost by negligence or disease since the College opened, a period of nearly nineteen months—an

evidence of fidelity and skill rarely witnessed on any farm. Students take charge of the buildings, and for the last four months of the summer term, they voluntarily assumed the duties of waiting upon the tables.

To be concluded next week.

MICHIGAN STOCK REGISTER.

SHORTHORNS.

Numbers with an "e" following them refer to the English Herdbook—all others refer to the American Herdbook, unless otherwise noted.

No. 81.—FANNY. Light roan heifer. Calved May 1, 1858. Bred by H. B. Goe, of Brownsville, Pa. and sold to H. E. Degarmo of Lyons, Mich.
1. Dam, Naomi, by Lord Barrington 659.
2. grandam, Blossom 8d, by Valentine 2d; he by Valentine 1st 2826.
3. grandam, Blossom, by Prince of Wales, imported, (4890e) 874.
4. grandam, — a cow owned by Mr. Dennis Kelly of the Prince of Wales stock.
Sire, Waterloo, by Earl of Seaham 10181 e.

No. 82.—BEAUTY SPOT 4th. Spotted roan heifer. Calved February 18, 1853. Bred by Mr. Remington of Philadelphia, and now owned by D. M. Fox of Lyons, Mich. See A. H. B., Vol. 2, p. 297.
1. Dam, Beauty Spot 1st, by Duke of Wellington; he by imported Prince of Wales 874.
2. grandam, Charlotte, by imported Wye Comet 1591e.
Sire, Belvedere 244, by Meteor 104, out of Empress, imported.

No. 83.—ROWENA. Light roan heifer. Calved 1856. Bred by John S. Goe, of Brownsville, Pa., and now owned by D. M. Fox, of Lyons, Mich.
1. Dam, Daisie, by Don Pedro? [Of what stock.—Ed.]
2. grandam, Nancy by Prince? [Of what stock.—Ed.]
3. grandam, Flora by Malcolm 1190e.
Sire, Santa Anna, by Pontiac, whose sire and dam were both imported. [Imported by whom and at what date, General Goe? and were they of pure blood as shown by the English Herdbook?—Ed.]

No. 84.—SPECK. Speckled roan heifer. Calved June 20, 1857. Bred by John S. Goe, of Brownsville. Owned by D. M. Fox of Lyons, Mich.

1. Dam, Beauty Spot 3d, by Belvedere 244.
2. grandam, Beauty Spot 1st, by Duke of Wellington, by Prince of Wales 874.
3. grandam, Charlotte by imported Wye Comet.
Sire, Richard Booth 906. This bull was got in England by Richard Booth's Monk 11824e, out of Rowena, by Sir Walter 2d; Rowena by Son of Noble, 4578e; Rowena, by His Royal Highness, 4099; Ruth by Belvedere 4th, 3129e; Polly Hopkins, by Adolphus 1611e; Primrose by Colonel, 3429e; — by Alba 726e; — by Symmetry 641 e; — by Marquis 1196e; — by Son of Favorite 256e.

No. 85.—FAWN. Mottled roan heifer. Calved March 5, 1857. Bred by J. S. Goe, of Brownsville, Pa. Owned by D. M. Fox of Lyons, Mich.

1. Dam, Blossom 8d, by Valentine 2d, by Valentine 1st 2826.
2. grandam, Blossom 2d, by Valentine 1st, 2826.
3. grandam, a cow owned by Mr. Dennis Kelly, of the imported Prince of Wales stock.
Sire, Lord Barrington 659, by Fortune 11487e, out of Lady Barrington 4th.

No. 86.—LOLA MONTEZ. Red heifer. Calved July 16, 1858. Bred by J. S. Goe, Brownsville, Pa. Owned by D. M. Fox, Lyons, Mich.

1. Dam, Victoria, by Matchem 8d; by Charles, by Sultan 163. Sultan was bred by John Hare Powell, Philadelphia, and was got by Malcolm 1190 e, out of Sarah imported by Mr. Powell in 1829. She was by President 517e, and her dam was Dairymaid by George 274e.
2. grandam, Flora 2d, by Jackson, by Sultan 163.
3. grandam, Delight by Chilton, by a Son of Sultan 163.
4. grandam, Nymph, by Duke of Norfolk 1939e.
Sire, Waterloo, by Earl of Seaham 10181e.

No. 87.—CALAMITY. Mottled roan heifer.—Calved May 11, 1858. Bred by J. S. Goe, Brownsville, Pa. Owned by D. M. Fox, Lyons, Mich.
Dam, Althea. See her pedigree in full No. 78 of Michigan Stock Register.
Sire, Richard Booth 906. In full No. 84 Mich. Stock Register.

This is a well defined pedigree, and descent excellent.

No. 88.—NELLY GRAY. Roan heifer. Calved April 3, 1858. Bred by J. B. Crippen, of Coldwater, Mich. Owned by D. M. Fox, Lyons, Mich.

1. Dam, Beauty, by Andes 213. (See Vol. 3, A. H. B. p. 302.)
2. grandam, Kate, by Ohio, 764.
3. grandam, Flora, by Baron Steuben 3097e.
4. grandam, Pink, by Reformer 2113.
5. grandam, Rose, by Mohawk, 4492e.
6. grandam, Adelaide, by Comet 1832. This bull was one of the Kentucky importation of 1817.
Sire, Orpheus, 1971, by imported Duke of Gloster, out of Songstress.

No. 89.—MINNEHAHA. Roan heifer. Calved August 3, 1856. Bred by J. B. Crippen. Owned by D. M. Fox Lyons, Mich.

1. Dam, Sarah Chambers, by Rhoderick, 932; by Otley 4632e, out of Ann Rusk, imported, by Red Robin 2490e.
2. grandam, Cynthia, by Olympus 771.
3. Ann Warfield, by Goldfinder 2066e.
4. Red Rose, imported, by Earnesty.
5. Rosney, by Erythron, 1018e.
6. — by Burmpton 54e.

Fodder for Horses.—M. CHARLIER, one of the veterinary surgeons employed by the Compagnie des Voitures de Paris, has written a letter to the "Constitutionnel," in which he states the results of his own experience as regards the English system of feeding horses with bruised oats and barley. It appears from his observations that these kinds of grain ought not when bruised to be given alone; the horses eat the mixture too greedily, they do not chew it sufficiently, and the consequence is that it is not well digested. But when the feed of bruised grain is well mixed with that of chopped hay, the horses are equally fond of it; they then chew it well, incorporate it with the saliva, and the digestion is therefore perfect. But care must be had not to diminish the rations too soon; nor should barley be substituted too suddenly for oats, the former being less easily digested than the latter; otherwise the horses grow lean and lose their strength.

The Jonesville and Hillsdale papers are agitating a permanent location of the grounds of the County Agricultural Society. In some counties peculiarly situated the permanent location has worked well, in others it has not. We can point to instances of both kinds.

In whatsoever house you enter, remain master of your eyes and tongue.

The Garden & Orchard.

From the Horticulturist.
THE NEW GRAPES.

BY CHARLES DOWNING, NEWBURGH NEW YORK.

I propose to offer a few remarks concerning some of the new recently introduced native grapes, because there are contradictory opinions advanced of some of them that are pretty well established here.

DELAWARE.—First I would notice the Delaware as that at least has been more fully tested than the others. When I first saw it (some five or six years since) I was so favorably impressed with its beauty and excellence, that I immediately procured a vine and recommended it to my friends, being confident from the ripening of the wood almost to the ends of the shoots, that it would prove hardy and be an acquisition on account of its earliness as a first-rate table and dessert fruit, profitable for marketing and vineyard culture. At first it was small in berry and bunch, and apparently but a feeble grower, having been subjected for many years to unfavorable circumstances which had dwarfed its habit, but not entirely obscured its excellence. But our friend, A. Thompson of Delaware, Ohio, who under such unfavorable circumstances did not fail to detect its fine qualities, and who first brought it into notice, deserves the thanks of every lover of good fruit. And now that the prediction made to my friends upon its first introduction has been more than realized, I will venture another; that is, the time is not far distant, perhaps at our next Pomological Congress, when all will esteem it a pleasure to award praise to a deserving public benefactor. It is not, too, a feeble grower and so unproductive as has been represented, as a few statistics will show. My own vine, without any extra cultivation, has made a fine growth of well ripened wood, and presented a mass of thoroughly ripened fruit, such as is seldom seen on any other native variety of the same age; but before I counted the bunches they were stolen and the loss keenly felt. My adjoining neighbor has a vine four years old which has borne this season 70 bunches of well ripened fruit proving very satisfactory, and \$100 was offered for the vine but refused. Another neighbor, on a vine of five years of age with twenty shoots averaging ten feet in length, has 60 bunches, that for size and beauty were a sight worth going many miles to see. Another adjoining neighbor has vines commencing to bear freely, and last fall he showed his opinion of the grape and his regard for a most interesting family of children, by purchasing fifty more Delaware vines for his family use; they were good vines and well treated, and under such management never disappoint the grower. Of the quality of its fruit all who became acquainted with it agree in awarding it the highest praise; it is sugary, aromatic and refreshing, and never cloy.

DIANA.—Of the Diana it would seem superfluous to speak; still its character is often misunderstood, and it is often called a feeble grower; whereas it is one of the most vigorous; and that, with its disposition to early overbearing, is its chief fault. From a good stock its bunches and berries are, even at its first bearing, large, but the fruit improves greatly in size and quality, and gains much in earliness as the vines acquire age. It begins to color and be very good to eat almost as early as the Delaware, but does not, like that, hasten to full maturity, and on the deep, rich dry soil in which it delights, it will continue to improve to the end of our longest and driest seasons, when its fine qualities will surprise those who have only been acquainted with the Isabella and Catawba.

Both this and the Delaware must still be regarded as in the progressive state, each season more fully developing their superior qualities; and the past and present season, so unfavorable for developing the flavor of grapes has afforded us the test to place them in the highest rank.

The HERBEMONT has been long known and highly prized at the South, particularly in Georgia and Carolina; but is very little known north of Delaware, although forty miles north of New York it has done well the two past unfavorable seasons; and a vine in Newburgh, in a sheltered yard, has not failed for years of giving most abundant crops of delicious, spicy fruit, whose berries are bags of sweet wine. The Herbemont, besides giving excellent fruit, is valuable for ornamental purposes; being unequalled in vigor, and beautiful in its wood and foliage. It needs protection in winter and will not generally ripen its fruit in the open ground north of New York, except in sheltered situations. In consequence of its greater vigor it requires more room than other varieties.

ANNA.—I am now inclined to say a few words respecting one that is not yet fully before the public; I refer to the Anna; and it might properly be called the Anna Muscat, as the flavor reminds one of the Muscat of Alexandria. It fruited for the first time while

my late brother was living, who thought highly of it, as well for its high flavor as for its beauty and color. The vine was purchased and removed, and like the removal of most old vines did not succeed well, giving no good fruit and not very healthy wood. I have observed its progress during the past few years with much interest. The vines that have been grown from it are vigorous and healthy in habit, much like Catawba, but with a thicker and more firmly fleshed leaf, which enables it better than any other except Delaware, to resist mildew. It also ripens its wood early, and has so far proved perfectly hardy. Its bunches and berries are large and only moderately compact in this respect, much like Catawba, peculiarly dotted and covered with a fine bloom. The color varies from greenish to pearly white, and sometimes light amber. The flesh is juicy and has generally a considerable degree of adhesiveness at its centre, but much less acidity than the Catawba. The flavor is rich and peculiar, but sugary, vinous, and spicy, with a fine pleasant aroma. It ripens fully as early as the Isabella; but like the Catawba, continues to improve to the end of the longest season.

REBECCA, which formerly promised so highly, I must not fail to notice by an encouraging word. Notwithstanding the difficulties it has had to contend with (and excessive propagation is the greatest) yet I believe that any one who gets a good taste of this fine and very rich fruit will be unwilling to be without it. The past remarkably unfavorable season has caused some mildew to its leaves, but not more than to that old standard the Isabella; and this should cause little distrust to its value, because when the vines become older and stronger they will be better able to withstand the changes of the seasons. Its foliage is not very abundant, consequently its fruit bearing should be moderated by thinning, and its treatment should be that of a garden rather than of an open vineyard variety. It is still new, and not fully tested out of the garden, in which it originated, and requires time to enable it to take rank as the American Chasselas.

HARTFORD PROLIFIC.—At the meeting of the Pomological Society held at Rochester in 1856, I spoke somewhat in praise of this grape, as it appeared to be underrated by many of the members who compared it with Charter Oak, &c. I consider it valuable, chiefly for its hardiness, abundant bearing and earliness, as it ripened this season earlier than any other variety in my collection. In quality it does not equal Isabella, but is desirable to come in for early marketing in small quantities and especially for the north. There is, however, an objection to it: as soon as fully ripe it drops from the bunch.

UNION VILLAGE.—This variety has not yet fruited here; it is very vigorous in its growth, but so far as tested, has not proved as hardy as the other native grapes, but it may become so when fully established. Its fruit is larger than Isabella and a little earlier.

YORK MADEIRA.—A hardy grape, ripening its wood well, growth moderately vigorous, very productive; bunch and berry of medium size, very compact, of pretty good quality, ripening a few days before Isabella. Hyde's Eliza, Canby's August, and also Baldwin's Early, as I have received it, so strongly resemble the above as to lead to the opinion that they are identical with it.

CLARA.—This new grape has just commenced bearing, and gives promise of much excellence. It is vigorous and appears hardy; bunch large; berry good size, color white and flavor excellent. It requires more time to give a decided opinion of its real value, but I think highly of it at present.

Shade Trees.

BY EDWARD MASON.

The cultivation of shade trees, as well as their selection and arrangement, are matters of such importance to all classes, that we deem it necessary to devote some time to the consideration of these subjects. In all hot countries, the shade of trees has been resorted to as a relief from the enervating heat of summer, and in cold countries, the rigors of winter are considerably mitigated by the shelter which they afford.

In almost every American city, town or village, the value of shade trees is more or less appreciated; but in the rural districts, the farmers appear to be careless and unconcerned about protecting their homesteads from the rays of the sun in summer, and the pelting of the storms of winter. In this they neglect their own interests very much more than they imagine, as it is well known that the shade of trees in summer, adds to the comforts of home, and the blessings of health, by enabling persons to take outdoor exercise, whilst the shelter of trees in winter adds materially to the support of the domestic animals, as they consume less food, and are at the same time always in better condition when they are kept warm in their sheds or houses, than when they are neglected, or but partially sheltered from the cold.

A grove, or belt of pines, surrounding the

farm-yard, will increase the comfort of all the animals that are wintered there, and assist in economizing fodder, by producing that peculiar degree of temperature which is suited to sustain animal life.

William Cobbett, a well known writer, says that when he lived in New Brunswick, the frost sometimes came on so suddenly, and was so intense, that the river St. John, which is a mile in breadth, was often frozen over in one hour. He says that the cold of winter was so intense that he could not leave his house, without being muffled in furs, &c., but when he went into the woods he found the temperature so warm that he could lay off his coat and gloves.

Mrs. Stowe, in that interesting book, "Sunny Memories of Foreign Lands," gives a description of the out-of-door amusements of European nations, and attributes the fine complexions, and extraordinary health and vigor of the English ladies, to their fondness for exercise in the open air, and the pleasant toil they undergo in the cultivation of trees, ornamental shrubs and flowers.

Much taste and skill are required in the selection and arrangement of shade trees. As it is necessary that a pleasing contrast should be created, trees of a weeping or pendulous habit should be put near those of an upright growth: the Weeping Ash, or the Willow of Babylon, appears to much advantage when contrasted with the Lombardy Poplar, the Maple or the Cypress. The American forests are greatly admired by foreigners for their wonderful extent and stately grandeur, and the brilliancy of their autumnal tints. We should imitate nature as much as possible, by producing an agreeable and beautiful variety of hues among the fading foliage of our shade trees.

The shade trees of American cities and villages, having been for the most part procured from the forest, without sufficient care in their removal or setting out, generally fail to answer the purposes for which they are intended. They have been drawn up too much by the shelter of the forest, and when taken away from their natural positions and placed in bleak aspects, do not throw out thick, umbrageous heads, but, in many cases, struggle for life, and in a few years decline away and die. Trees intended to ornament streets, parks, or pleasure grounds, should be raised in nurseries, where they can be pruned, and trained, and properly fitted for the positions they are to occupy. Farmers can not be expected to resort to nurseries for their shade trees, as they generally have a superabundance of them growing on their own land, but they should use care and skill in the selection and transplantation of such trees as they require. The roots should be cut at a considerable distance from the stem, and a large ball of clay removed with them; they should be carefully planted in well-prepared soil, not too deep in the earth, but nearly in the same position in which they originally stood, in reference to depth in soil and the cardinal points. Young Maples, Oaks and Elms, and several other trees, may sometimes be found on the edge of clearings, and in other open places; these, having had the benefit of exposure to the sun and wind, for a considerable time, have begun to form thick, woody heads, and on this account are better suited for shade trees than those which have grown up in the midst of the forest.

A good collection of forest trees is an interesting sight. Botanic gardens and arboreums are extensively patronized in European cities; they should be more esteemed in America, where so many noble specimens of trees and shrubs can so easily be found to adorn them. It has been remarked that a considerable amount of sickness prevails, in the summer, in those cities and towns of America which are unprovided with public parks, or well shaded promenades of any kind, and it is said that several epidemics arise from the population being confined in badly ventilated houses, and not provided with opportunities or inducements for exercise in the open air.

When European and American varieties of trees are grouped together, they form a pleasing contrast with each other. Of the Oak alone, many beautiful specimens might be procured; and the Oak is well calculated to form an ornamental tree, for its leaves being persistent, or remaining on the tree after they fade, are well adapted for producing variety in the color of the woods, groves, or parks in which it grows. Among the most interesting varieties of the Oak, may be mentioned the following:

The White Oak, *Quercus Alba*, American.
The Cyprus " *Quercus Fastigiata*, Europ.
The Scarlet " *Quercus Coccinea*, American.
The Black " *Quercus Nigra*, "
The Turkey " *Quercus Cerris*, European.

As these trees vary considerably in size, as well as in the shape and color of their foliage, they make a very beautiful group. The Cyprus Oak grows tall and upright, somewhat like the Lombardy Poplar. The White and Black Oaks, form heavy umbrageous heads. The Scarlet Oak is remarkable for the brilliancy of the autumnal coloring of its leaves,

and on this account, makes a desirable tree for streets and parks. A few good specimens of these should be found in every collection of forest trees.

Evergreen Oaks are very beautiful, and one of them is very useful, this is *Quercus Suber*, the cork tree; although it was thought that this tree was too tender for the winters of the United States, it is now found to grow well in several of the States, and is cultivated in the vicinity of Cincinnati; it is from the bark of this tree that cork is made, and besides its utilitarian properties, it is very ornamental.

The Beech, *Fagus*, is not much used as a shade tree; yet there are some varieties of it which are extremely beautiful; among these, are the purple, and copper kinds. The weeping Beech is a graceful tree, which, from its pendant habit, is well adapted for contrasting with those of an upright growth. Useful and ornamental hedges can be made of young Beech trees, if raised from seed, properly managed, and planted out at a suitable age. These hedges, being kept free from weeds, and trimmed or clipped regularly, form a beautiful and almost impenetrable fence. The Beech grows readily from seed, and is easily propagated; not long ago a farmer in England received a premium for raising 56,000 Beech trees, from one bushel of seed.

In constructing hedges of these trees, the plants should be permitted to remain in the nurseries until they are four or five years old, during which time they should be transplanted two or three times, at increasing intervals, in order to make them branchy, and prepare them for the position they are to occupy. They should be planted one foot asunder in the hedges or rows, where they are to remain. Some persons plant them closer than the distance we have mentioned; when they have grown two or three years in the fence, they should be shortened or headed down, in order to preserve the beauty and regularity of the fence. In well-kept gardens and pleasure grounds, the hedges are trimmed twice or three times a year, but for ordinary purposes an annual trimming will be found sufficient. Beech hedges can be formed to the height of twenty feet or more, and when managed in this way, make excellent shelter for orchards or gardens. They are considered more ornamental when not more than four or five feet in height.

The Hornbeam, *Carpinus Americana*, is much esteemed in Europe as a hedge tree; many prefer it to the Beech; it bears clipping exceedingly well, and forms beautiful wall-like hedges, which sometimes attain to a height of more than twenty feet. The leaves of the Hornbeam, like those of the young Oak and Beech, are persistent, that is, remain attached to the tree after the sap has left them.

(To be continued.)

Letter from a Californian Horticulturist

Our country (the Pacific coast), is, so far as systematic and scientific culture is concerned, all new and untried. Only a few years ago, nothing was known; and up to the present hour almost everything is to be learned. Some very striking results, however, have followed our feeble experiments. In January of 1856, I received, from a farm in Western New-York, Elm and Sugar Maple seedlings, about 3,500 each. They would average some three or four inches long. They had grown side by side there and equally well. They arrived in good condition, and were planted in a choice piece of ground, and treated with care. The Elms have grown vigorously; many of them are now ten, and some twelve, feet high; while the Maples have mostly perished; and those that still live, neither grow, nor promise continuance of life. The Horse Chestnut, so noble with you, refuses almost entirely to grow here. The Beech, after frequent importations of both plants and seeds, is an entire failure. I have not one left.—The American Linden, or Basswood, does slightly better, though it bears no comparison to its home growth. The *Abies Canadensis* (Hemlock), thus far, is an entire failure; *Cedrus Alba* (White Cedar), ditto; while the *Pinus Aleutica* (Swiss Pine), and several other varieties of the *Pinus* family, and also of the Cupresses and *Abies* families, of which I have imported and planted the seed, flourish finely. The *Ailanthus*, *Catalpa*, *Gymnocladus Canadensis*, China Tree, *Tamarix Callica*, and several of the members of the *Acacia* family (both American and Australian), do well in our soil and climate. The Almond, the several varieties of the Walnut (excepting the shag-bark), and the Butternut, all grow rapidly from the seed. My oldest are two years old, and are ten to twelve feet high. The Tamarind, with the simple protection of one thickness of common sheeting during the winter months, comes into bearing the second year from seed. Our Apples and Pears, especially those of large size, when entirely exposed to the sun, are apt to sunburn on one side, while the stone fruits are entirely free from the evil.

The above facts pertain to the Sacramento valley, in the latitude of St. Louis. In the coast valleys, under the influence of sea fogs and sea breezes, and also in the more elevated portions of the country, and in the mountain valleys, they might not fully apply. In the winter of 1855, I imported, for my ornamental ground, some fine, healthy plants of Norway Spruce, of White and Purple Lilac, *Deutzia scabra*, and *Weigela rosea*,

which I continually nursed with the utmost care; but they have nearly all perished, and the remainder barely live. They do not grow. Our sun is evidently too hot, without the influence of frequent showers. The Rose, the Pink, Flowering Almond, *Corchorus*, *Pomegranate*, *Rose Acacia*, *Honeysuckle*, *Passiflora*, and *Chrysanthemums*, seem entirely at home; while the *Verbena*, the *Geranium*, and the whole family of *Tulips*, *Hyanthids*, *Lilies*, &c., do well with abundant watering.

This is a bare outline of what families, immigrating to California, may expect to be able to cultivate with success. I may add more when I have more room.—W., Sacramento.

HORTICULTURAL NOTES.

A New Pear—The Democrat.

The "Democrat Pear" is a new variety described in the *Gardener's Monthly*, and is there spoken of by Mr. Meehan as being equal to the Ott in quality, and double in size, rivaling in this respect the Beurre Giffard. It originates in Lehigh County, Pa. It ripens about the end of August, and has a greenish yellow skin, sprinkled with white dots. The tree is a strong grower, and early regular bearer.

A Pie Melon.

A melon was exhibited to the Pennsylvania Horticultural Society, raised from seeds that came from California, and which were supposed to be from a fruit of Chinese origin. This melon was boiled by the Secretary of the Society and the fruit then resembled stewed apples so closely that any one might easily be imposed upon. This melon is called the Pie Melon.

The Artichoke.

This is a vegetable with which the Detroit market is but little acquainted, and yet it is a great favorite as a vegetable delicacy. Our winter is too severe for its cultivation without unusual care is taken to protect it. The supply for the New York market, is mostly procured from the Southern States, and from Bermuda, and we note that Professor Mapes of the *Working Farmer* states he has eaten them the present season brought from France in ice boxes by the steamers.

Fruitgrowers Convention at Milwaukee.

A Convention of the Fruitgrowers of Wisconsin was held at Milwaukee on the 16th and 17th of December. The attendance was reported as rather thin, but there was a fine variety of fruits shown, and the quality was remarkable, considering the very discouraging season that fruit growers have had.

A cheap Vinery and its Profits.

In June, 1847, I built a small vinery for the Hon. J. N. Arnold of this place. It being the 25th of May when we commenced, there were doubts as to the canes ripening so as to withstand our changeable winters, as there is more to fear from sudden changes than severity of frost. It was a lean-to, covering the south side of the barn or carriage-house. We have excellent drainage and soil. In making the border we covered the surface with 18 inches of prairie loam and cow manure, 10 bushels of bone-dust from a button factory, two barrels of leached ashes and lime from a soap and candle factory, and applied soap-suds in the summer while the vines were in a growing state. The size of the house is 24 x 14, and 14 feet in height at the back, with 6 feet in front. The front sashes are hung on hinges at the top for ventilation. Mr. Arnold was so well pleased with the growth in this small vinery, that he has erected a larger. I have taken, as you will see by Emery's Journal, the first premium for samples of cold vinery grapes grown on plants two years old. They were in competition with grapes from older vines and more costly structures. My calculation in the same Journal of the profits of grape growing, is as follows:

Cost of grapes and border.....	\$160.00
Interest two years.....	20.00
Attention during two seasons of one hour each day at \$2 per day.....	72.00
Ten per cent. per annum on the cost of the house for wear and decay.....	20.00
Cost of vines and expressage—24 vines at 50 cents.....	12.00
Rent of ground.....	2.00
Manures.....	5.00
Tools, including syringe, cords, &c.....	4.00
Total.....	\$235.00
CH.	
250 pounds grapes, at Chicago prices, \$2 per pound.....	\$500.00
Profit.....	\$265.00

We fruited twelve of the vines, and have the other twelve ready for a heavy crop next year. In my estimate, I have given more than the actual cost to the present time, and now have my vines, two years old next June, and the house left for future profit, besides the \$265 in cash, which might easily have been obtained as profit on the fruit, and the real pleasure which grows out of the cultivation of such fruit.

The varieties fruited were the Old Black Hamburg, Golden Chasselas, Chasselas Musque, Muscat of Alexandria, Wilmot's Black Hamburg, Royal Muscadine, Black Prince, Grizzly Frontignac, Zinfandel, and a few other varieties. Of these the Zinfandel and Black Hamburg fruited heaviest. The vines, obtained of Ellwanger and Barry, of Rochester, New York, proved true to name and came in excellent order. Is the reader satisfied as to the profit of grape-tries?—J. C. URE, of Chicago, in *Horticulturist*.

Product of Bees.

Eugene Lewis of Ontario county New York writes to the Country Gentleman that he took during the past summer and fall 2535 pounds of pure box honey, 2400 pounds of which he sold in Canada to go to New York, at 15 cents per pound. Some of the best stocks made 72 pounds of honey. Besides the honey, he secured 20 young swarms, valued at \$5.00 each. Mr. Lewis uses the Quinby hive—a common box hive, made 12 inches square, inside by 14 inches deep, with holes in the top, and boxes over which he puts a cap. This apiarian states that he finds the only way to get rid of the millers and worms is to pinch their heads, and we agree with him on this point.

FOREIGN AGRICULTURE.

THE AGRICULTURE OF AUSTRIA.

TRANSLATED FROM THE FRENCH OF THE JOURNAL OF PRACTICAL AGRICULTURE.

Continued from last number.

In estimating the price of the sugar at 11 cents per lb., that of molasses at \$2.80 per cwt., and, lastly, the residue at about \$2.60 per ton, we find that the 308 millions kilos of beet-root have produced

Sugar.....	\$3,930,000
Molasses.....	256,700
Residue.....	98,636

Total.....\$4,284,886

(or £857,057 sterling) which return shows that the value of the raw beet-root is tripled by its employment in the manufacture of sugar.

The leaves of the beet-root and the residue represent together a quantity of 28,337 tons of hay, which furnishes food for 6,500 middle-sized oxen. Let us add lastly, to complete this account, that the manufacture of beet-sugar in Austria occupies nearly 20,000 workmen during four or five months of winter.

We may form some idea of the extension that the manufacture of beet-sugar is still destined to take in Austria, if we reflect that Hungary, Galicia, Croatia, and Slavonia at present possess only twenty sugar works, whilst the natural fertility and depth of their soil, and the cheapness of land, place them in conditions particularly favorable to the cultivation of beet-root.

We now come to the third of the agricultural speculations, which have more particularly fixed the attention and attracted the capitals of the great Austrian proprietors, namely, the cultivation of the potato, and its distillation for the extraction of alcohol. This branch of industry has exercised over Austrian agriculture a considerable influence, from which even the rest of Europe has not wholly escaped. Since the year 1817 the history of Agriculture has not had to report any general scarcity; on the contrary, good seasons have succeeded each other almost without intermission, the year 1830 being the only year in which Eastern Europe has suffered under the influence of an alimentary crisis, occasioned, in part at least, by the political events, of which Warsaw was the theatre.

The depression in the price of grain was the necessary consequence of the state of things that we have pointed out; and in 1824 the market price fell to such a point that the harvest did not suffice to cover the expense of production, and the husbandman found it impossible to pay his taxes and rent. It may be supposed that, placed in such a position, the zeal of the great proprietors for agriculture would be sensibly cooled, and that the majority of them would seek, in manufacture, the means of making up the deficiency in their revenues. It is to these causes that we may correctly attribute the establishment of a great number of distilleries and breweries, and the creation of numerous factories of starch, size, sugar, and vinegar.

By its antiquity and its numerous affinities with agriculture, the distillery was necessarily the first to attract the attention of those who were anxious about the means of deriving advantage from the produce of the soil, so as to secure a revenue.

It is hence that we saw arise in central Europe innumerable distilleries, of which some were formed upon an extraordinary scale.—The culture of the potato took an immense extension, and the products of its distillation by developing amongst the populations around the fatal habit of intoxication, struck a heavy blow at their intellectual existence.

However this may be, this revolution in the economy of rural employments was followed by a sensible improvement in the incomes from land; and some went so far as to assert, in a general way, that distilleries would alone stamp a value upon the land, and enable the owners to draw a rich revenue from the soil.

Upon those domains on which the quantity of tubers did not suffice to employ in a continuous manner, the action of the distilling apparatus, they found themselves compelled to have recourse to the peasants, and engage them to make, in their culture, a large reserve for the potato. In face of the extraordinary reduction in the price of cereals, and an absolute want of openings for them, it was not difficult to convince them; and they lost no time in banishing from their rotations the beans and peas, in order to increase the extent allotted to the potato, and thus furnish to the distilleries the first substance they require. The manufacture of spirits then assumed fresh activity; but the distillers soon found out that the production must be regulated exactly by the requirements of the consumption, and that the benefits of the enterprise were intimately dependent on the rigorous observance of this principle.

In search of markets, they deliver at a low price brandy of inferior quality, sell on credit,

and, in short, agree to all kinds of sales on account, according to which the value of their goods is to be reimbursed to them in potatoes, deliverable at the time of raising. At the same time other means of seduction were employed by brokers and agents; in a word, nothing was neglected to attain the end, namely, to make the large workings produce the greatest possible amount of revenue. As to the physical and moral consequences of the immoderate use of brandy, they may be easily guessed; Galicia presents an example of it which deserves to be studied; and they have been amply exposed in the works of authors, and by temperance societies, who have undertaken to struggle against abuse of alcoholic beverages.

Allured by the temptation of the profits, the husbandman, in spite of the extension given to the culture of the potato, did not take the trouble to calculate very exactly the quantity necessary for his own use. From the small number of tubers which were not sent to the distillery, they selected the best for their own consumption; so that when the time for planting came, they found in the cellars or pits only a mass of small tubers often insufficient to seed the surface to be planted, and which it was therefore necessary to cut into small pieces, at the risk of failure.—It is not surprising after this, when the seed-tubers were chosen under such objectionable conditions, that many cultivators afterwards attributed the potato disease to a disorganization of the plant or a debility in its constitution.

In manufacturing on a large scale, they obtain from three bushels of potatoes 29 pints of brandy and 127½ pints of residue. The net cost price of an eimer of alcohol (12½ gallons,) without reckoning interest of capital engaged in the business is \$3.00, and as the eimer is sold at \$6.00, there remains a profit of \$2.00. Now a quintal (140 lbs.) of potatoes producing about 8 quarts of alcohol, the potatoes are paid for at the rate of 33 cents only, a price which does not pay, and at which they cannot be procured. These figures explain the motives that have induced the distillers to throw themselves again upon grain, and also show how much the advantages of their operations depend on the employment of the residue.

With these residues they fatten oxen, whose food ration is calculated at the rate of ten pounds of residue for one pound of hay. According to this, 150 livres or 50 mass of residue, which are obtained from 100 livres of potatoes, are equivalent to 15 livres of hay. In fixing the price of hay at 1 florin 30 kreutzers per quintal, we find that the 50 mass of residue ought to be worth about 6 kreutzers, and it is, in fact, the price paid at the great distilleries.

But it is in fattening pigs that the most advantageous application of them is attained, and all the great distilleries fatten pigs of the Hungarian breed. This is, it may be said, one of the conditions of their success; for if they confined themselves to fattening oxen, and the price of alcohol were to be still further reduced, their existence might become a question. But the fattening of pigs appears to have in Austria a prospect so much the more certain, that it finds at Hamburg a considerable outlet in four large establishments for salting, which do not consume less than from 2,400 to 3,000 hogs per week.

How Cruiser was tamed.

The following paragraphs are copied from "Frazer's Magazine" for November:

Accompanied by one individual alone, a nobleman of indisputable nerve, temper, and physical strength, Mr. Rarey proceeded to the encounter. As we heard the story told, his injunctious to his comrade were characteristic enough. "Whatever happens, my Lord, said he, 'don't you speak or interfere—at least, not till you see me down under his feet, and him worrying me!' This compact made, he resolutely walked into the arena, which consisted of a loose box divided by a half-door of some four feet or more in height. Stepping quietly up to this barrier, he leaned his arm upon it, so that it was covered by the iron bar that ran along the top, and looking fixedly at the savage he intended to tame. Cruiser—from whose muzzle, head-stall, and such impediments, had been removed—we believe by some mechanical arrangements, for none dared go near enough to touch him—made his usual dash at the intrepid stranger, to pounce upon him as a cat would on a mouse.

Rarey stood perfectly motionless, neither altering his attitude, nor the expression of his countenance, in the slightest degree. Thinking he had his enemy by the arm, the horse seized and worried at the bar as if he would have bitten it through. Again and again retreating, for an impetus, to the further corner, he rushed at the mysterious stranger, actually screaming in the uncontrollable violence of his rage, Rarey sustaining these successive charges with the same *sang froid* that he had shown at the commencement of the engagement.

At length, after more than an hour of this wild scene, with its frantic fury on one side, and its calm scientific superiority on the other, the redoubtable Cruiser, blown, exhausted, dripping with sweat, and completely puzzled in his quinine mind as to the properties of this figure, which he could no longer believe to be

human, came quietly close to it, and, true to his nature, warped as it was, smelt at it, and touched it with his nose; then Rarey threw open the half door, and walked boldly up to him. The last sentence speaks volumes. It was a trait not of the system, perhaps, so much as the man. But what confidence the man must have had in his system, thus to preserve his coolness and equanimity in a position which to every one but himself would have been of mortal danger. The "salt was now on the bird's tail," and when his own peculiar method had been resorted to, and Cruiser, converted into a quiet, docile, and not particularly showy hack, had been ridden before astonished hundreds, the horse-tamer was universally recognized as such, and both the papers and the public expressed themselves satisfied with Mr. Rarey.

The Lois-Weedon System of Growing Wheat.

The Reverend Samuel Smith, of Lois Weedon, Northamptonshire, England, for the past ten years, has created more excitement and criticism amongst the growers of wheat on clay soils, than any other person. He has just published the sixteenth edition of a pamphlet, descriptive of his method, which he originated and which he has put in practice. The past season this gentleman took from his wheat field the twelfth crop, in twelve successive years, each crop, in some degree, being better than the one that preceded it: The crop of the present year was 40 bushels per acre; of last year 36; the year before, 37, and the years before that an average of 34 bushels per acre. And this, recollect, only from half the acre, for one half of each acre, every year, is in fallow. The plan is to divide his field into lands only five feet in width, and in the middle of every land, is drilled or dibbled three rows of wheat, each row 12 inches from the other. This permits an interval of three feet between every three rows of wheat. This three feet interval, while it is the fallow for next year's crop, is also made to contribute towards the growth of the crop of the present year, as will be seen by the following description of the method of cultivation pursued by the writer:

LOIS WEEDON VICARAGE, NOV., 1858.
"I begin, as I began long since,—My wheat on the ground is coming up well. And it is a beautiful sight to see the thin green lines run so evenly and so regularly that they seem to blend together in the distance. It is the more striking from the broad intervals that separate the narrow wheat lands, and mark out the growing crop into rows of three."
"I only waited for the coming up of the wheat crop to dig these important intervals. They are just finished, and are the beginning of my labors for my next year's crop. And I will now take you with me, if you are willing, and show you the whole process of my simple cultivation, till I have cut and threshed and measured the produce."

"At the outset of my farming, 15 years ago, the field before us was in grass, which I pared and took off the land; then plowed it the full depth of the five-inch staple for a crop of oats, followed by vetches. After this came the first triple-rowed wheat crop with its wide intervals, which I dug one spit deep, bringing only a few inches of yellow clay subsoil to the surface. The second year these well-stirred intervals produced the wheat crop, and the stubble was dug in.—And thus, year after year, alternately, the same acre of land has had a fallow and a wheat crop too. In the third and fourth years the spade went down a little deeper; and so, gradually and regularly, for four years more, till a depth of 16 or 18 inches was reached, when I stayed my hand; and, after that, was satisfied the four following years with a single spit. Last year however I returned to the double spit and a fresh inch of clay; and this brings me back to this year's operations which we are come out to view."

"The digging, as you see, is two spits deep; and after the pan was a little stirred the stubble and the staple were turned upon it, the clods scattered, and the second spit, with its sprinkling of yellow clay, was gently laid up-ermost, in such a form that the frost might be felt right through the whole. Look: you can almost see down to the sub-soil."
"And what follows next? These high-rigged intervals will lie thus during winter, higher than the tender wheat and so protecting it, and checking the drifting snow. The winter fallow over, I shall stir and level the ridges with the horse hoe, well clean the rows and the intervals, keeping the surface of the latter constantly open till the wheat is about to flower. Then will come a process peculiar to the plan, and which meets a difficulty in our uncertain climate of no ordinary importance. The rotation farmer has a heavy crop of wheat; but heigh ho! the wind and the rain: he is utterly helpless against these: his wheat comes down; the rain it raineth every day, and his hopes are blighted. I owe my general immunity from this disaster to the broad space of my fallow intervals, which enables me to take a turn with the plough up and down, and so—the soil being well pulverised, mind that—to earth up my wheat with the mold-board."

Immediately after this operation follows another of singular efficacy in swelling the grain: I subsoil—with Sigma's subsoiler—as deeply as I can with two horses, in the centre of each furrow just made by the plough; and this closes the work till harvest."

"The crop being carried I make a preparation at once for sowing. I first lightly horse-hoe and clean the furrows; then plough close to each stubble, casting the earth back

again into the centre. There are thus two furrows in each interval, and these I subsoil, which leaves the whole of the land intended for the crop in a hollow, pulverised condition. But, though wheat loves a mellow bed, it loathes a soft one. I therefore consolidate the soil with the double clod crusher, which takes two beds at once, the horse walking on the stubble in the centre. This being done I wait till near the middle of September for the rains, if it may be, to perfect the culture."

"I should be glad to have your close attention while I now describe the sowing; because upon the accuracy of this process depends not only the goodness and fullness of the crop, but the great pleasure of, perhaps, a daily inspection of true lines and even vegetation of this beautiful plant for 10 months in the year. All machinery for sowing, besides the single-hand dibble, I have long since discarded. I reject even Sigma's admirable planter, which I hear is so effective, believing all to be comparatively unsafe and inefficient; for with the hand dibble—with the right hand dibbling and the left hand dropping the grain, I can see the seed deposited. I know it is there in its right place and at the right depth. I am satisfied too, with the rapidity with which the practiced workman does his work. It is true his work is marked out for him more accurately and quickly than he could do it himself. Another hand stretches a line, nearly but not quite in the centre, from one end of the interval to the other. With a light hand implement—invented by Sigma—which holds three small mould-boards set at the required distances apart, he now, guiding the middle board by the line, draws with almost mathematical truth three minute furrows in which the dibble deposits the seed. And, when the whole piece is completed, if the surface be dry enough, I cover over the seed and close up the channels with the crusher."

"At spring the crusher is again employed in compressing the wheat plant; after which the hand, and the hand hoe—another of Sigma's capital inventions—are busy between the rows as long as it is safe; and then comes the last scene of all—the sickle and the harvest home."

"Sum up then, the average annual outlay for these wheat crops first to last; always keeping in mind the digging process I have just described,—how it began with one shallow spit the first two years, increasing by degrees to two good spits of pulverised soil, 2 or 3 inches only of clay soil being added, and for four years not even that."

Digging and cleaning the moiety of each acre.....	\$8 16
Horse-hoeing ditto three times, 6s; ploughing, 4s.....	2 40
Hoeing and hand-weeding.....	1 20
Rolling with crusher at seed time and at spring, 1s.....	72
Two pecks of seed, 2s. 6d.; dibbling 5s.....	1 60
Bird keeping.....	96
Earthing up wheat.....	72
Reaping, &c., to threshing and marketing.....	7 93
Rent, 2s, rates and taxes, 4s. 8d.....	10 62

Total outlay.....\$34 50
Such has been the process—such the outlay. The wheat is not threshed: what is the yield?

"From the moiety of each acre on the clay, the yield this year—1858—was upwards of forty bushels of fine red wheat, with an estimate of two tons of straw. I call it the moiety of each acre, for so it literally and actually is."

HOME NOTES.

The Snow, what it does for the Farmer.

Well, it is here. What does it do for the farmer? It has cleared the air of ammonia, and will retain it till it is deposited in the soil at its thawing. It contains also considerable quantities of carbonic acid gas, and this too is good for the soil. It draws the frost from the ground, and moreover, as is commonly believed, causes grains and grasses to tiller. Certain it is, many plants, especially grasses, actually make considerable growth under the snow. This operation of "drawing out the frost," is caused by the snow acting like a blanket, and defending the earth from the cold, the warmth of the earth itself gradually melts the frozen crust, and when the snow melts the ground is found nearly or quite free from frost, not heaved or broken up, as when the frost leaves it suddenly by the action of the sun, but loosened, light and friable, and covered with verdure, seeds starting, and just in a state to be greatly benefitted by continued warm weather, and not to be greatly damaged by a few severe frosts. It is to be hoped then, that this noble deposit, the greatest in point of depth which has fallen at one time within the memory of most men—will continue upon the ground till we are ready for spring.

If we compact and tread down the snow, evidently its qualities are changed; it no longer is the 'down-coveler' of the sleeping earth, but a mass of ice, through which the cold strikes, and in which water stands and freezes to the earth below. A cart path across the field will often leave its mark long into the summer, especially if across a field of grain. If we have powerful rains enough to saturate the snow, and this again freezes, no similar damage will be done to the grain fields, for it will be noticed that the crust of ice will not be frozen to the ground, but resting upon it, having a porous surface beneath.—Conn. Homestead.

"An Alabama planter says that cotton has destroyed more than earthquakes or volcanic eruptions. Witness the red hills of Georgia and South Carolina, which have produced cotton till the last dying gasp of the soil forbade any further attempt at cultivation; and the land, turned out to nature, reminds the traveler, as he views the dilapidated condition of the country, of the ruins of ancient Greece."

A HINT TO COUNTY SOCIETIES.

MR. EDITOR.—Now is the time when the County Societies throughout the State are making up their premium lists, and I would like to see some plan adopted by which we could test the superior qualities claimed for the full bred stock over those that are half bred, or show no breeding. We are now having a great many fine cattle brought into the State, by our enterprising farmers, and by some men of capital. For instance, I need only point out some of those which you have called attention to in the pages of the *FARMER* and whose cattle you have put on record in the *Stock Register*, such as E. N. Wilcox, Henry Warner, D. M. Fox, H. E. Degarmo, and E. M. Deforest. With such additions to the improved stock in various portions of the State, would it not be a matter of interest to test by competition at our County Fairs year after year, the quality of the stock produced from the crossing of the native cattle with these, or of the pure blood. This cannot very well be done without premiums are offered, and rules laid down under which the competitors must come forward and comply with before bearing off the premiums.

To reach this question, and bring the merits of the full and half blood animals before the people most interested is what I would seek for, and hence I make the following suggestions:

1st. That county Societies should offer a premium for the best pair of spring calves bred from a thorough-bred Durham or Devon bull. The owner or breeder to certify to their age and breeding. These calves may be from either full blood, grade or native cows. These calves to be shown at the Fair of 1859, and the best pair to be awarded a premium of five dollars, but the premium not to be paid till the Fair of 1860.

2d. A premium of two dollars to the best pair of yearling steers bred as above. But to win this prize, each of the parties who enter for competition, must show that he competed the year before with the same animals as calves, and must also give in to the Society a written statement of the cost and method of keeping during the six winter months, or from the first of November to the first of May, and for the six months from the first of May to the first of November.

3d. A premium of fifteen dollars to be awarded in 1860, for the best pair of two year old steers, bred in the same manner as above, but to win this prize the competitor must have entered his steers when calves, as provided above. He also must give a written statement of the method of keeping during winter and summer seasons.

4th. A premium of twenty dollars to the best pair of three year old steers, which shall have been entered and shown as calves in 1859, yearlings in 1860, two year-olds in 1861, and three year-olds in 1862. The method and cost of feed to be stated for the summer and winter seasons as above required.

Such a series of premiums, would not only call out the skill of the breeder, but also the experience of the feeder. The statements when compared would show which breed, and which family was most economically kept, and the scales would surely tell the weight which had been made season after season. If the calves which won in 1859, continued to win for the next three years, they would be a living testimony to the accuracy and correctness of the committee, who judged them while the animals grew in age and size. The balance and the published statements of cost of keep, would speak for themselves, and prevent any partiality by judges, and tend to keep inexperienced committees within reasonable bounds.

I want to see the produce of some of these thorough-bred animals brought to the test, so that we may be sure of what profits can be made by raising them, and I can think of no other plan by which it can be done. If any of your readers can give us a better scheme, I shall be glad to hear from them. I am very sure that our County or even our State Societies could not do a greater service than to adopt some such system which would make plain the advantages of using well bred stock, as being the most economical and the best paying either when used with grades or natives.

Yours, NATIVE.

Large Potatoes.—A writer in the *Baltimore American Farmer*, has grown some specimens of the Peach bloom variety of potatoes, which he considers as worthy of note and challenges any one to produce better.—They were sent to Gov. Wise of Virginia, and raised by a Mr. Thos. H. Nottingham, one weighed 2 lbs. 4 oz., several weighed 2 lbs. 2 oz., and four weighed 8 lbs. 6 oz.—These are good weights, can any of our potato growers do better?

NEW ADVERTISEMENTS.

J. L. HURD & Co. Wheat, Oats and Corn wanted.
A. FAIRBANKS & SONS, 900,000 Trees.
F. E. ELDRED, Glen Black Hawk.
H. GREELEY & Co., The N. Y. Tribune.

NOTICE.

The "Editors and Publishers Association of the State of Michigan," will hold an adjourned meeting at Lansing the third Thursday (20th) January 1857. A full attendance of all Editors, Publishers and Printers in the State, are particularly requested, as there will be business before the Association of vital importance to the "craft" of the State. Editors and Publishers from abroad are invited to join us at that time. SETH LEWIS, Pres., GEO. W. PATTERSON, Sec'y.

MICHIGAN FARMER.

R. F. JOHNSTONE, EDITOR.

SATURDAY, JANUARY 15, 1859.

WHAT WE ARE DOING.

We must say that we have not yet settled ourselves comfortably into the weekly harness, but our readers will see that we furnish them with an immense amount of information of various kinds. The introductory chapters on the examination and properties of wool, will give a slight inkling of how that subject will be treated in the FARMER. At first it was thought that the subject could be treated in three or four numbers; but after the wools were examined, and the materials collected, it was found that the subject was one worthy of a more extended series of articles, and that the diagrams and engravings, as well as the examinations, would consume so much time and labor, that it was determined to copyright them, with the design of publishing them in book form at some future day. These articles, with their illustrations, will be the most remarkable series of papers ever published on the wools of the United States, and we think will give the wool growers some new ideas on that subject.

It will be seen that we discuss at length one of the subjects embraced in the premium list of the State Agricultural Society; and it is to be hoped that those who object will make manifest their opinions, with their reasons.

We print also, this week, a portion of the report of the President of the Agricultural College. This is one of the most interesting documents that has yet been issued on that subject, and gives a clearer insight of the position and difficulties in which that institution is placed, and the plans for the future, than any former report. It is valuable, also, as being the first report after the college has been tried by actual practice, and its deficiencies learned from a seasonable experience.

In "Foreign Agriculture," we commend to the attention of our readers, the article describing the "Lois-Weedon" system, not as a practice which they are likely to adopt, but as one that is suggestive of many improvements in the culture of wheat in this State.

A "Native" makes some first rate suggestions on the subject of carrying out a series of trials of the qualities of the thoroughbred bulls, which we should like to see put in practice. This is "proving the pudding by the eating of it."

Our market reports contain every thing of interest to the agriculturist that has transpired for the past week. If any thing is missing, tell us of it—our ears are open. No other weekly agricultural or family paper equals in this respect the MICHIGAN FARMER! Into what other journal can the agricultural community of this State look for so much information concerning the PENINSULAR STATE?

FINANCIAL.

The operation of the new Banking Law, is now beginning to be discussed, and though we note that many writers seem to think that the stringency of its liability clause is such as to preclude foreign capitalists from embarking much capital in the business in this State, yet it is acknowledged that this very stringency will cause none but those who are able and have honest intentions to go into the business. The people of this State want no others. When it will be seen that the law is so strict as to forbid any organization under its provisions, it will be time to modify them. Meanwhile we learn that ex-Governor Myron H. Clark of New York with three other persons have resolved to commence a bank in this city with \$50,000 capital, which is to be increased as the company needs it. A bank of the same kind, is also to be commenced at Kalamazoo under the new law. Capital is plenty at the east, and while Michigan trade is now paying from 2 to 4 percent per month for accommodation, there will be some difficulty in persuading moneyed men that this State does not afford a fair field for enterprise, and that capital judiciously managed will not bring in a fair return.

In Virginia, the crop of tobacco in 1850 was less than that of 1840 by over eighteen million pounds.

Wool Circulars.

We print below Goodale & Co's Circular on the wool business. These Cleveland gentlemen seem to have just found out what we persisted in "preaching up" as long ago as last May. We think we have a distinct recollection of looking for their circulars during the season of the wool clip for a few words backing us up in the opinion we alone then held, but at that time nothing very encouraging was held out to the producers who had their clips on hand, and their "Circular" did not think it advisable to notice our opinions on the shortness of the crop. Now "when the blindest can see," that wool *must* be in good demand, the "circular" can see as far into the millstone of the next clip as the best of us.

OFFICE OF THE C. W. DEPOT, }
Cleveland, Jan. 1st, 1859. }

DEAR SIR:—The tendency of wool in our market is still upward, the limited supply of fleeces alone preventing activity.

Prices are now fully ten cents above the ruling rates in June last, and in consequence of the short supply of fleece, the prices of pulled have been materially enhanced. We quote pulled as follows. No. 1 at 40, superfine at 45, and extra at 50c.

It may be proper at this time to take a retrospective view of the wool trade for the past eighteen months up to the close of 1857, although to go into detail would require too much time. From the 1st to the 20th of August 1857, it had become apparent to all that there was a deficiency of domestic fleece wool. An active speculative feeling prevailed, especially in fine wools, and we felt justified in holding our superfine grade at 65c, which price we expected to realize by the first or middle of Sept., in the meantime refusing to make long sales at 62½c and 63c. Immediately after the "Panic," or about the 25th of August, prices were quite out of the question.

The depressed state of the market continued until early in the spring of 1858, at which time wools that could have been placed readily to 62 to 63c, during the fore part of August, 1857, were regarded at 40c.

The impression was general that the incoming clip would be secured at lower prices than had prevailed for many years, and as late as May, 1858, no one talked over 37½c for the best grades. In the month of June following, the market opened at 39 to 34c, in this State, and at still lower figures in States west of us.

At this time (January, 1859,) 42 to 45c, may be regarded a low average, while our superfine grade would readily command 55c.

Never perhaps in the history of our country have we seen so sudden and unparalleled a depression of our manufacturing interests or so rapid a recovery.

The indications now are that high prices will be realized for the next clip.

Very truly, etc., GOODALE & CO.

THE OAKLAND CO. AGRIC. SOCIETY.

The members of the Agricultural Society of Oakland county held their annual meeting to elect officers for the ensuing year on the 11th instant. There was not a very large attendance, but a warm interest was felt in the progress of the Society, as was shown by the almost unanimous adoption (one only dissenting) of an amendment to the Constitution which provides that membership tickets will be henceforth one dollar instead of fifty cents.

The Society is somewhat in debt for the purchase of an addition to its grounds, which were too small for its accommodation, but it is expected that the amendment of the Constitution will aid it in that respect, and enable it to make a further enlargement within a reasonable time. The President, Hon. R. E. Trowbridge was re-elected, with the Treasurer, H. C. Andrews of Milford. J. R. Bowman, Esq., was succeeded as Secretary by Mr. Kelsey. Mr. Bowman has long been associated with the Oakland Society, and was acknowledged to be a most efficient and active officer. That he had the interests of the Society deeply at heart, will be acknowledged by all, when it is known that for the two past years he has not drawn his salary, lest it might embarrass the Society. We part with him from that position, with a sincere regret.

A new executive board was chosen, at whose meeting in February next the programme of proceedings for 1859 will be adopted.

THE SWAMP LANDS.

Inquiry being frequently made at the office of the Commissioner of the Land Office relative to the purchase of portions of the swamp lands, that have not been as yet patented to the State by the General Land Office at Washington, "it may be well to state," says the Lansing Republican, "that they are not yet in market." Patents however were to be forwarded from Washington, during the present week as follows:

Allegan county,	2,520 acres.
Clinton county,	7,077 "
Newaygo county,	39,410 "
Ottawa county,	53,358 "

It seems also that the gratifications expressed by the State at the grant of the Swamp Lands, has awakened the attention of the General Government to their true value, of a large portion of them, and a re-survey has been ordered, the result of which will be to lessen the amount of the grant by over one million of acres, and to take out of this grant a large portion of the most valuable lands. This re-survey also has delayed the making out of the patents; and has caused considerable confusion, which has disabled the State officers from making sales.

History of the Agricultural Press of Michigan.

BY J. L. TAPPAN, LIBRARIAN, MICHIGAN UNIVERSITY.

Concluded from Page 13.

The State Agricultural Society was organized at Lansing on the 17th of March, 1849, by the State officers and members of the Legislature. A number of county societies were already established, and a State association was loudly called for. At the first election of officers, Gov. Ransom was chosen President, and J. C. Holmes became Secretary. The MICHIGAN FARMER remarks, "it is ominous of good, that our State Agricultural Society has been so fortunate in the selection of its Secretary, upon whose efficiency very much depends."

The constitution then adopted provides that the Executive Committee, at each annual meeting, shall "prepare a report and abstract of the transactions of the Society during the preceding year," and transmit the same to the Legislature.

On motion of Hon. Titus Dort, the Legislature ordered three thousand copies of the "Transactions for 1849" printed, which was the first volume that appeared. It contains the address of Lt. Gov. Fenton at the organization of the Society, and that of Hon. E. H. Lothrop, at the first State fair, held at Detroit, Sept. 26, 1849. There is also a premium essay on wheat, by J. G. Morse, and addresses before several county societies, by Wm. M. Fenton, J. R. Williams, and Horace Bemis. The constitution and proceedings of the Society are included, together with the reports of county societies, making in all a volume of 234 pages.

The "Transactions for 1850" contain essays on "Wheat Growing," by Warren Isham; on "Indian Corn," by J. F. Chubb; on "Potatoes," and "Farmers and Farming," by S. H. Preston, and on "Country Life," by Bela Hubbard. There is also the address of Hon. J. R. Williams, before the State Agricultural Society, and the reports of county societies contain addresses by J. D. Pierce, H. S. Weller, Gen. Cass, M. A. Patterson, R. P. Eldredge, and David Bush. There are 508 pages in this volume, to which the statistics of Michigan, compiled from the census of 1850, are appended. The Secretary of the Essex Agricultural Society, Mass., in a letter to Mr. Holmes, dated Nov. 4, 1851, says: "I have been every way delighted with your 'Transactions,' and find much that is valuable and interesting."

The "Transactions for 1851" embrace communications on cattle, sheep, poultry, grain, etc., farm reports, and articles on "Farm Accounts," by Prof. Fox; on "Cattle Breeding," by J. Starkweather; on "The Shepherd's Dog," by D. D. Gillet; on the "Influence of Weather on Crops," by Linus Cone, and on "Fish in and around Michigan," by George Clark. There is also a premium essay on "Agricultural Fences and Enclosures," by N. D. Redpath, and an address at the State fair by Gen. Cass. The county reports comprise addresses by E. C. McIlvaine, H. Redfield, L. Walker, F. W. Curteius, W. N. Montgomery, J. B. Hunt, and Gov. Parsons. This is a volume of 495 pages, and is pronounced by the MICHIGAN FARMER, "an honor to the agriculture of our State, to those who have contributed to its pages, and to the Secretary by whose labors it has been compiled."

In the "Transactions for 1852" there are communications, among other subjects, on "Neat Cattle," by J. D. Yerkes; on "The Blood Horse," by A. Y. Moore; on "The Draught Horse," by W. P. Lomas; on "Poultry," by Dr. Freeman; on "Plows and Plowing," by J. Shearer; on "Vegetables," by J. Brown, and on "Thorough Draining," by Linus Cone. A prize essay on "Manures," is furnished by Chas. Betts, and an address before the State Society, by Hon. Justus Gage. The county societies, in their reports, offer addresses by W. S. Farmer, Wm. R. Schuyler, E. Lawrence, F. F. Snow, J. S. Bates, A. J. Poppleton, G. M. Reynolds, M. L. Fitch, and J. Kingsley. There are 527 pages in this volume.

The "Transactions for 1853" comprise prize essays on the "Potato," by M. D. Redpath, and on the "Potato Rot," by E. C. Roberts; an address by Rev. H. P. Tappan, at the State fair; and communications on "The Potato," by E. Mason; on "Sheep Husbandry," by E. Lakin Brown; on "The Ox," by C. W. Green; on the "Agricultural Value of the Upper Peninsula," by C. Whitteley; on "Iron in the Upper Peninsula," by C. A. Trowbridge, and on the "Coal Fields of Michigan," by R. R. Lansing. The Geological Reports for 1840-1, of Bela Hubbard, are re-published here, and a series of meteorological observations are furnished by L. Woodruff, which are continued in subsequent volumes. In the county reports there are

addresses by G. B. Turner, N. W. Butts, C. Fox, E. Prince, I. P. Christianity, W. W. Phelps, L. H. Parsons, and E. O. Haven.—There are 680 pages, besides an appendix, containing the statistics of Michigan, compiled from the census of 1854.

The "Transactions for 1854" contain a prize essay on "Clover," by E. Mason, together with various communications and valuable statistics; the geological reports of C. C. Douglass; the annual address by Bela Hubbard; the proceedings in regard to the establishment of a State Agricultural College; and addresses delivered at county fairs by R. F. Johnstone, J. L. Conger, W. H. Montgomery, and E. F. Wade; making a volume of 732 pages.

The "Transactions for 1855" contain prize essays on "Thorough Draining," "Manures," and "Wheat," by E. Mason; essays on "The Potato," by E. C. Roberts, and on the "Potato Rot," by E. Mason; an address at the State fair, by Hon. J. Broom; sketches of Michigan, by Prof. Fox, and of Detroit, by R. E. Roberts; geological and botanical reports, by B. Hubbard and Dr. Wright; and county addresses by W. U. Benedict, J. G. Sutherland, R. F. Johnstone, F. J. Littlejohn, T. M. Cooley, A. S. Welch, and L. H. Parsons; in all 842 pages.

The "Transactions for 1856" contain prize essays on "The Potato," by S. B. Noble, and on "Sheep," by E. Mason; communications on "Fruit," by T. T. Lyon; on "Fruit Trees," by E. Mason, and on "Clover," and "Thorough Draining," by S. B. Noble; the Report of the State Agricultural College; and addresses at county fairs, by J. E. Tenney, C. P. Avery, E. H. Pilcher, A. K. Strong, and Wm. M. Fenton; making 790 pages.

These "Transactions," of which eight volumes have already been issued, owe much of their interest to the untiring exertions to Mr. J. C. Holmes, the former Secretary of the Society, who compiled them from the best materials at his command. They comprise statements, essays, and addresses from many of the best farmers and most distinguished citizens of the State, and are highly creditable to all concerned. They have gained a high reputation elsewhere, and one of the most competent judges at the East, has stated that he considered them "among the very best published in the United States."

An act of the Legislature, approved Feb. 14, 1853, provides that two thousand copies of the Transactions be annually printed, and that one copy be sent to each township library. It seems to me that enough copies should be issued to supply each district library also, and it would be well if every farmer in the State could obtain a copy at a moderate price.

The "Journal of the Michigan State Agricultural Society" was first issued in March, 1853, by Mr. Holmes, under the direction of the Executive Committee. It was similar to the one published in New York, being intended "as a source through which the proceedings of the Society, and all matters connected with its welfare, may be placed before its members with as little as possible." A second number appeared Sept. 1, 1853, which completed the first volume. It was designed to issue this "Journal" quarterly, and the first number of the next volume appeared on the 1st of February, 1854, after which its publication was discontinued for want of funds.

The "American Text-Book of Agriculture," by Prof. Chas. Fox, was published in May, 1854. It contains the substance of the author's lectures at the University, embracing "a synopsis of the theoretical and practical truths and principles of agriculture." The MICHIGAN FARMER speaks of this work as giving evidence of great industry and research, and as a very useful work even to scientific men. A large amount of materials had been collected for another volume, which, unfortunately for the interests of education and agriculture, Prof. Fox did not live to complete.

An English work, entitled "Everyman his own Farmer," has been lately reprinted in this State, by Messrs. E. and Wm. Wallington, of Ann Arbor. This is said to be "a very valuable work on the treatment of horses."

In this, and the two previous articles, I have endeavored to present a complete list of all the agricultural publications, which, as far as I have been able to ascertain, have issued from the press of the State. If a renewed interest, by this means, should be taken in these works, and a generous and hearty support given to the WEEKLY MICHIGAN FARMER, the only agricultural paper published in the State, my purpose will be amply fulfilled.

The Steamship Prince Albert of the Galway line from St. Johns, has made the quickest passage on record. She left St. Johns on the 10th of December and was in sight of the island of Arran on the coast of Ireland on the 16th, being out only five days and sixteen hours.

The State Legislature.

The petitions for a registry law are very numerous.

In the Senate there are two contested seats, ex-Governor Fenton contesting that of the Senator from Genesee and E. B. Tyler of Washtenaw, the seat of Mr. Pond of Ann Arbor.

The Standing Committees in the Senate are:

On Supplies and Expenditures—Perry, Yost, and Dickinson.
On Finance—Jones, Trowbridge and Pennoyer.
On Militia—Gorham, Porter and Dudgeon.
On Roads and Bridges—Welch, Mills and Pennoyer.
On State Prison—Tower, Porter and Crouse.

On Division of Towns and Counties—Davis, Williams and Warner.

On Claims—Hayden, Brown and Hoyt.
On Judiciary—Conger, Davis and Birney.
On Internal Improvements—Williams, Tyler and Muzzy.

On Public Instruction—Birney, Canfield and Perry.

On Incorporations—Porter, Carpenter and Barna.
On Agriculture—Brown, Meacham and Parker.
On Manufactures—Dudgeon, Hayden and Yost.
On Enrolled Bills—Grosvenor and Tower.
On Expiring Laws—Brodhead, Muzzy and Davis.
On Printing—Mills, Barns and Pond.
On Mines and Minerals—Dickinson, Hoyt and Parker.

On Privileges and Elections—Carpenter, Birney and Crouse.

On State Library—Backus, Pond and Brodhead.
On State Affairs—Barns, Jones and Grosvenor.
On Public Lands—Trowbridge, Conger and Carpenter.

On Federal Relations—Canfield, Backus and Welch.

On Asylum for Insane—Gorham, Conger and Meacham.

On Asylum for Deaf, Dumb and Blind—Hoyt, Backus and Gorham.

On House of Correction—Yost, Williams and Trowbridge.

The Committees in the House of Representatives are:

Ways and Means—Dickey, Mitchell, Fallas, Green, Bancroft.

State Affairs—McMahon, Richards, Beebe, Newton, E. H. Thompson.

Judiciary—Muzzy, G. W. Brown, Daniels, Ferris, A. W. Buel.

Internal Improvements—Kelsey, Brewster, Carr, Watkins, Frisbee.

Harbors—Mullolland, Kelly, B. Brown, Dalton, Beers.

Elections—S. F. Brown, Phelps, R. Thompson, Newman, Bush.

Federal Relations—Gilluly, Perkins, Mills, Lane, Dunbar.

Banks and Incorporations—Loomis, Allen, Muzzy, Beeson, Campau.

Public Lands—Monroe, Brooks, Wendell, Wixon, Davids.

Printing—Woolnough, Enos, Robinson, Green, Bushnell.

Agriculture and Manufactures—Fowler, Felt, Glessner, Wallace, Gels.

Towns and Counties—Kore, Driggs, Baldwin, Gage, Connor.

Education—Sessions, Pratt, Starkweather, Mitchell, Greenfield.

Rules and Joint Rules—Kelsey, Dickey, Daniels, McKinley, Richardson.

Engagement and Enrollment—Perry, Carr, Woolnough, Wilkerson, H. S. Buel.

Roads and Bridges—Childs, Thomas, Raymond, Kore, Grace.

Militia—Raymond, Allen, McDermott.

Supplies and Expenditures—G. W. Brown, Perkins, Reeves.

State Prison—Goodwin, Driggs, Carpenter.

State Library—Reynolds, Lane, Smith.

Indian Affairs—Watkins, Sharpe, Warner.

Minerals and Mines—Clarke, Reynolds, Greenfield.

Asylum for the Insane—Pratt, Wixon, Allen, H. S. Buel, Bushnell.

Asylum for the Deaf, Dumb and Blind—E. H. Thompson, Brooks, Gage, Enos, McDermott.

Geological Survey—Mitchell, Brown, Richards, Daniels, Greenfield.

House of Correction—Phelps, Robinson, McKinley.

Amendments to the Constitution—Miles, A. W. Buel, Ferris, Mussey, Wendell.

Convict Labor—Loomis, Newman, Monroe, Buel, Gies.

Governor Winsor delivered his address in person, to the two houses in joint convention.

On Saturday last, Kinsley S. Bingham, the late Governor of this State was elected for United States Senator for six years from the 4th of March next. He takes the place of the Hon. C. E. Stuart of Kalamazoo.

William L. Seaton has been appointed agent for the State Prison, in place of Mr. Hammond whose term of office has expired. Mr. Seaton was the building commissioner at that institution.

Petitions on various subjects are pouring into both houses of the Legislature, but as yet very few bills have been reported, and only two or three bills of local interest have as yet been passed.

The various subjects referred to in the Message have been referred to the appropriate committees.

A bill has been introduced into the House of Representatives at Lansing to abolish grand juries, and providing for the indictment of offenders upon information. There seems to be an opinion prevalent that the bill will become a law.

Scientific Intelligence.

The remains of an immense Mastodon were found by some hunters in a swamp near defiance, Ohio, a short distance from the lake. The bone of the leg below the knee, was 6½ feet in length, and weighed fifty six pounds. The ribs ranged from 12 to 16 feet in length.

The income of the Patent office for the nine months ending Sept. 30th 1858, was \$150,994 and the expenditures during the same time were \$144,488. During the same time application for patents were received to the number of 4691, and 2816 patents granted.

Agricultural Patents, for the Week ending Dec. 28th, 1858.—Francis M. Eagle, North Manchester Ia., a stump puller.

Joseph Fowler and F. M. Bacon, Ripon Wis., seed sower.

Thomas R. Martell, Phil., furnaces for burning lime.

J. K. Jennings, Kingston Pa., a mode for preserving fruit.

Howard Mann, of East Attleboro Mass., improved cultivators.

F. M. Marshall, Sequin Texas, seed planter.

S. M. May, of Galesburg Ill., a machine for picking corn.

W. J. Reynolds, Webster N. Y., improved trace fastenings.

W. A. Wood, of Hoosick Falls N. Y., improvement in cutting bar of Harvesters.

Chas. W. Glover, of Farm Ridge Ill., an improved method of making stacks.

Among other facts communicated at a recent meeting of the Chicago Historical Society, Col. Graham stated his discovery of a lunar tidal wave upon Lake Michigan. From the comparative small area of the body of water acted upon by the lunar influence, the coordinate of altitude could not but be small. When the moon is in conjunction with, or in opposition to, the sun, its average is about two-tenths of a foot.

At the request of the Smithsonian Institution, Baron Osten-Saen of the Russian Legation who has made a special study of Dipterous Insects, has prepared a catalogue of the previously described species of this Continent, analogous to that of Melchior's cleptera of the United States, which was published some years ago by this Institution.

The Household.

"She looketh well to the ways of her household, and eateth not the bread of idleness."—PROVERBS.

EDITED BY MRS. L. B. ADAMS.

"THE ROCK"

IN THE VALLEY OF EL GHOR.

BY J. G. WHITTIER.

Dead Petra in her hill tomb sleeps,
Her stones of emptiness remain;
Around her sculptured mystery sweeps
The lonely waste of Edom's plain.

From the doomed dwellers in the cleft
The bow of vengeance turned not back;
Of all her myriads none are left
Along the Wady Mousa's track.

Clear in the hot Arabian day
Her arches spring, her statues climb;
Unchanged, the graven wonders pay
No tribute to the spoiler, Time!

Unchanged the awful lithograph
Of power and glory undertrod,
Of nations scattered like the chaff
Blown from the threshing floor of God.

Yet shall the thoughtful stranger turn
From Petra's gates, with deeper awe
To mark afar the burial urn
Of Aaron on the cliffs of Hor.

And where upon its ancient guard
The Rock, El Ghor, is standing yet,
Looks from its turrets desert-ward,
And keeps the watch that God has set.

The same as when in thunders loud
It heard the voice of God to man;
As when it saw in fire and cloud
The angels walk in Israel's van!

Or when from Ezion-Geber's way
It saw the long procession file,
And heard the Hebrew timbrels play
The music of the lordly Nile.

Or saw the tabernacle pause,
Cloud bound, by Kadesh Barnea's wells,
While Moses graced the sacred laws,
And Aaron swung his golden bells.

Rock of the desert, prophet-sung!
How grew its shadowing pile, at length,
A symbol, in the Hebrew tongue,
Of God's eternal love and strength.

On lip of bard and scroll of seer,
From age to age went down the name,
Until the Shiloh's promised year,
And Christ, the Rock of Ages, came!

The path of life we walk to-day
Is strange as that the Hebrews trod;
We need the shadowing rock as they,
We need, like them, the guides of God.

God send His angels Cloud and Fire
To lead us o'er the desert land!
God give our hearts their long desire,
His shadow in a weary land!

—National Era.

How she was Brought up.

Hannah is a pale, delicate looking girl. She has been toiling since before break of day in the kitchen and nursery of the village lawyer's lady, and now, at the late hour of ten, is going to school with weary steps and a sorrowful countenance. She is an orphan, and her only legacy is an earnest desire for knowledge, and a spirit too independent to receive it from charity. Mrs. Mindless has kindly offered her a home, and schooling part of year, provided the time not given to study shall be spent in her service. There are but three children in the family, and, as Hannah is young, her duties shall mostly consist in attending to their little wants, and performing such other light services as the lady shall require.

Poor Hannah is anxious to qualify herself for a teacher, and to do that is willing to labor to any extent her strength will permit. Through the tedious winter months, she beguiles the time and lightens her heart by thinking of the happiness that will be her's in the spring, when the books of Nature and of Science shall be together opened for her perusal. The children become so attached to her, and she makes herself so useful in every department of the house, that the lady has thought proper to dispense with other help, and frequently entertains her visitors by expatiating on Hannah's good qualities, her industry, and, above all, her attachment to the darling children. The little dears are so in love with her that the tender mother protests she is actually jealous. They will allow no one but Hannah to prepare their food, to wash, to dress or to amuse them, and if they are sick, the mother declares they will cry the whole night through if Hannah does not rock the cradle and give the medicine. In short, there never was such another girl, and it is perfect folly to think of having more help, for she takes the whole charge of the work upon herself, and is more profitable than any two she ever had.

Thus Hannah, instead of taking the charge, is obliged to sustain the weight that is thrown upon her, and when spring comes, the time to which she has looked forward for relief, she finds her duties increased. The children must now walk out, and she must go with them; or the lady has visits to make, and Hannah must stay away from school to take care of the house; or she has company and Hannah must be at home by three o'clock to get tea and keep the children out of the way. Mrs. Mindless is very sure that the hours Hannah spends at school are quite suf-

ficient for all the purposes of getting an education, and will never allow her a moment of time to get her lessons at home. After she has toiled through the long, sultry summer morning, and just as she has reached the school house door, the lawyer's errand boy comes, out of breath with running, to tell her that little Tommy fell down and hurt himself, and will never stop screaming till she comes to rock him to sleep; besides, the lady has just concluded to go out riding, and Hannah must stay and keep house, for if she can not be there when she is wanted, she may find another home as soon as she pleases.

Hannah feels grateful for the protection given to her, a friendless and penniless orphan as she is; she knows that "getting another home" would be attended with great difficulty, especially if she should offend the lawyer's lady, and her kind heart prompts her to believe that the treatment she receives, proceeds more from thoughtlessness than design. She feels that it is cruel, but she submits because it seems a necessity from which there is no escape. By degrees her books are more and more neglected, her spirit is broken, her ambition crushed, and she becomes a mere household drudge, whom the lady is proud to praise as the hard-working, orderly and obedient girl that she has brought up.

Are there any Children in America?

DEAR DOCTOR: Your invaluable SCALPEL has made many a noble stroke at the abuses of our sin-defiled city, and in some cases with good success, but there is one it has not yet attacked—I mean the mode in which the children are governed, (or rather not governed,) I believe would be more near the mark.) Having much leisure time, I have lately endeavored to find a child in our goodly city; but strange as it may seem, although there are many youth, there are no children—good, honest, old-fashioned parent-obeying children. I have entered into the houses of rich and poor; high and low, and all are the same miniature men and women. The law of obedience is reversed, and "Parents obey your children" is the way it now reads. I have heard a child consulted as to what should be cooked for dinner, and if an older member of the family suggested any article, the answer from the child was, "No, I don't like that," and it was not cooked. If a servant dared attempt to prevent any of these young despots doing a mischief, he or she must be immediately discharged. If a teacher finds fault with the disorderly conduct or gross neglect of duty he perceives in his pupil, he is told the young lady or gentleman will leave his school; and he may think himself well off if he is not grossly insulted. In the course of my search after a genuine child, I extended my rambles to a pleasant country village, and here, thought I, there must be some that know how to follow the divine command of "Rule well your own household," but alas! here too I was mistaken. On one occasion I heard a boy of eight years take his mother to task, in the most insulting and abusive manner, for going out to drive with some friends while he was at school, and instead of ordering him to leave the room and informing his father of his disrespectful conduct, she humbly apologized and promised to do so no more. Alas! alas! for America, if these are to be our future rulers. Walk through the streets of our city at the hour our public schools are dismissed, and mark the bold, audacious looks of the girls, and the insolent and defying behavior of the boys, and you will no longer wonder that there are young Goulds among us. The wonder is, that there are no more. And why is all this? Is it not owing to the manner in which their time is spent at school in a great measure? Preparing for exhibitions and orations, speaking pieces and singing songs, parading the streets with banners and music, dressed in uniform, and inflated with pride and vanity, instead of being taught their duty to God and their parents, and prepared to get an honest living instead of preying upon the public. Are not nine tenths of the children that attend the public schools the children of poor mechanics, destined to provide for themselves by the labor of their own hands, and how are they fitted for this? Where will you find the neat-handed maiden that can sweep a room, make a bed, or bake a loaf of bread, and then, modestly arrayed preside at her father's table, and converse sensibly with his guests; or where the boy that can enter his father's store, and assist in the discharge of business in case of necessity? If our clergy would preach to their congregations the duties of parents and children instead of exhausting their energies on doctrinal disputes, and blowing the trumpet of defiance at each other on every political squabble, we might hope for better things.

J. D. in the Scalpel.

The SCALPEL's correspondent may be correct in charging the misbehavior of New York city children to the mismanagement of their schools, but we think the root of the evil lies nearer home. Disobedience is a sturdy tree with spreading branches, some of which may blossom and bear fruit in the schools and

streets, but it is planted, nourished, fed and strengthened at home. A child well taught, obedient and mannerly at home, will be the same at school, in company, or in the streets. In the cases cited by "J. D.," are not the mothers plainly at fault? Poor, weak, childish creatures themselves, they are far more fit to be under the tutor's care than to have the care of children.

Not very long ago we were in a house where a fine healthy boy of four years was frolicking around the room in a very boisterous manner, while the mother who was confined to her chair by a lame ankle, coaxed, scolded and threatened him by turns, in vain attempts to keep him quiet. Presently he took a fancy to have the low cushioned chair on which her lame foot was lying, for his horse.

"O, mama could n't spare it; see poor mama's sore foot! O, O, Sonny!" groaned the mother, as the little fellow catching hold of the chair, shook it with all his might to dislodge her foot from the cushion. "Well, there, take it; I suppose I shall always have to give up to him, he's such a wilful child," she added, as we placed a stool for her foot, and the boy went galloping across the floor on his chair horse.

Such weak mothers are more to be blamed than pitied. How can children be expected to treat such parents with respect or veneration, or what wonder is it that when old enough, they come out into the streets with bold, insolent audacious looks, and worse behavior? Strike at the root of the tree, Dr. Scalpel, and the branches will soon cease to bring forth their baneful fruit.

NOTES FROM THE COUNTRY.

Early in the month of September, on one of our first collecting trips, as we came out from a somewhat broken and woody tract of country, we passed up a broad, smooth road, between fields enclosed by the highest, truest, neatest rail fence we had yet seen, and all along on each side of the road were planted stately maples, then in the full blaze of their autumn glory. Suddenly our driver turned into a wide, green avenue leading to the house, and in another moment sprang from the wagon and up the steps of the handsome dwelling before us, to call the owner out for a settlement. A sturdy old gentleman, bare-headed and in his shirt sleeves, came forth, to whom we introduced ourselves and business.

"Well—well," said he very slowly, as he looked at the account, "I guess I've got a receipt that will cover part of this, or the whole."

"Very well," it shall be settled by your receipt," we replied.

"Come in then," said he; "come in; if you are in a hurry it won't take you longer to wait in the house than it will out doors."

We went in, and he rummaged his desk and bookcase for a long time, but without success.

"I guess I'll have to give it up that your book is right," he said at last; "and you may make out the bill just up to this time and I'll settle up and stop the FARMER. I've got a good many other papers to read, and a good deal of work to do, and I guess I won't take it any longer."

He paid the money and we gave him a receipt, which he took, and read carefully over from beginning to end. On coming to the signature, he looked at us with a curious squint of his half-shut eyes and asked in a deliberate tone:

"Is that your name? L. B. Adams?"

"Yes, sir."

"Are you the woman who writes for the FARMER?"

"Yes."

"Wall, wall, see here now, I guess you had better stay to dinner, and I'll see my son; he manages things here, and may be he'll want to take that paper another year. Come, girls, take off this woman's things, and hurry your dinner on the table; and you, young man (turning to our driver), go and put your horse in the barn and give him what he will eat; you are younger than I, and can wait on yourself. Why I'm glad to see you," he continued, reaching out to shake hands as though we had just come in; "I'm very sorry to put you to the trouble of coming after this trifle, but I'm proud that you had the spunk to do it, and now if you'll make out the bill a year ahead, I'll pay that and all that is behind, too."

He did so, and then we were called to dinner. Such a farmer's table, loaded with such farmer's fare and surrounded by such a company of farmers, we have not seen elsewhere for many a year. It was threshing and seed-time, and all the hands employed in the fields and in the house were gathered around the board, while the master stood at the head and reverently gave thanks for the bounties spread before us, after which a generous supply was dealt out to each, and the whole meal enlivened by the most social freedom of family conversation. The moment, however, that dinner was over, the old gentleman

turned to us with a mock severity in his manner, saying:

"You are a man of business, and you was in a great hurry when you first drove up; now I don't want you loitering around here after you've got your money and your dinner, so fix up and be off with you, and the next time you come, just leave business behind, and come and stay a week. I intend to take the MICHIGAN FARMER, but I'll look out that you never come here dunning for that again."

There was some laughing and fun as the kind-hearted old man helped the "man of business" into the buggy, and we drove away well convinced of two things: firstly, that delinquent subscribers are not always as bad as they try to make themselves appear; and secondly, that in all northern Washtenaw, we had not seen a finer farm or a more tempting summer retreat than that to which we stand invited by the proprietor of Boyden's Plains.

Several times we have had occasion to notice the difference between systematic housekeepers and those who do their work just as it happens. We believe the latter class have much the hardest time of it, as it often happens that their work is all undone when there is the greatest necessity of its being well done. They lose time, temper and self-respect, to say nothing of the good opinion of others, by trying, in a moment of necessity, to make up for the mismanagement of days and weeks. There will be times in all families, even the best regulated, when, owing to unusual circumstances, there will be more or less confusion or disarrangement of the established order of things, but an experienced eye can see at once the systematic groundwork, and easily distinguishes between it and no groundwork and all. To the credit of the mothers and daughters at whose homes we have of late had the pleasure of stopping, we can say with truth, that by far the greater number are of that class who need not blush at any time to have an unexpected guest drop in upon them, though, as we have before said, nearly all are doing the work of large families without extra help.

One of the nicest, cheeriest, dearest little matrons we have seen, is not yet twenty years of age, a young mother, and far more thoughtful in her quiet, motherly ways than many a one who has had twice her years of experience. There are many nameless attentions most grateful to the travel-soiled and weary stranger, yet which no one likes to ask for at a private house; and not one of these did the dear little woman forget, but offered them all in such a quiet, graceful way that they seemed to come as a matter of course, and as much to be expected and accepted as the sunshine with the daylight. She was doing her own work, too; the babe was pilloved up in a rocking chair, where the mother could see it, and touch the rocker now and then, and though they had only the day before moved into the house they now occupied, no apologies were made, or needed, for, all unsettled as they were, there was no confusion, bustle or hurry, even though the dinner was to be made ready half an hour earlier than usual, in order that the stranger who had come upon them so unexpectedly might be at the depot in time for the coming train. We have thought of that dinner a hundred times, at least; the pigs' feet, so white and tender, piled up smoking hot on the snowy platter, the white, sweet head of cabbage, so nicely done, the potatoes and turnips boiled just enough and dished so neatly, such bread and butter, and such delicious coffee; and then the pleasant faces gathered around, and the fair and gentle mistress at the head, with no heated flush or frown of impatience on her brow, but serene and cheerful, pouring the coffee and conversing as pleasantly as though no weighty cares of housekeeping ever rested on her shoulders. May life's burdens ever rest thus lightly upon her, and may she be ministered unto in all times of need, as tenderly and thoughtfully as she ministered unto others.

Some women have a natural tact at management which seems to make all work come easy to them, even though surrounded by many inconveniences, while others make drudgery of the lightest tasks, and render themselves and all around them unhappy by their complaints and fretting, and households ill-arranged, in spite of all the aid that money and the most careful husbands can give. Let us hope, however, that there are very few of this last class, and that if any chance to read these lines, they may call into action their own good judgment and common sense, and resolve not only to "set their houses in order," but to keep them so. They will soon find that order and regularity will make their labors much easier, and give more happiness to themselves and all connected with their households.

There are three females in the State prison of Massachusetts, one for poisoning her husband, and the other two for setting fire to dwelling houses under circumstances which convicted them of arson in the first degree.

The accouchment of the Princess of Prussia was expected about the middle of January and the Queen of England's presence was anxiously looked for at Berlin.

LOVE IN THE RAIN.

My love took shelter under a tree,
From rain, the summer rain,
And I, by love made bold and free,
Took shelter with her in the lee
Of the wide, high spreading Chestnut tree,
And blessed the rain.
Quoth I, "Dost think the storm will pass?"
Quoth she, "I'm but a silly lass,"
Quoth I, "True love hath a rainbow bright,"
Quoth she, "Most beautiful and bright,"
Quoth I, "My love is hard to tell,"
Quoth she, "Come close, I'll listen well,"
Oh, rain! oh, rain!
No sunshine e'er shall come again
So dear to me as that stormy rain!

Cure of Dress Articles.—A great deal of the character of a woman may be found out by her dress. It is certain that we may decide on her prudence and economy, if she be not dressed above her position; on her good taste, if there be grace and harmony in the form and color of her dress; on her order and neatness if it be clean and in good repair. A glove that wants mending an unlaced boot, or unbrushed hair, denote a sloven,—a character always despised. To dress well, by which is understood to dress neatly and becomingly, is the habit of well educated people, the result of good taste and early custom; but to allow the love of finery to produce extravagance, vanity, and envy, betrays a weak intellect and a vulgar mind.

It is disgraceful to see a young lady with a shawl rumpled as if it had never been folded since it was bought, a dress soiled or unbrushed, a bonnet bent out of form, or a collar worn the wrong side out. All these circumstances arise from negligence or idleness, and an economical person is well aware that clothes last twice as long when they are well taken care of. A lady's dress should be folded and placed in the drawer, or hung in a press, as soon as taken off; if it be silk or merino, it should first be dusted or brushed, and if a hook have come off, or anything be out of order, it should be attended to at once. A bonnet should always be dusted lightly after it has been worn, and covered over when put by.

Gloves should not be drawn one within another, but spread flat in a glove box kept expressly for the purpose. A shawl should be folded exactly in the creases in which it was first bought, and will then always appear new. Ribbons are best kept on wooden rollers; if white, in blue paper, which preserves the color. All muslin dresses, not wanted to be worn for some months, should be washed, dried without starch or ironing, and rolled up tight in a clean old towel till they are needed, as starch left in the muslin injures the fibre.—*Cin. Gazette.*

Death of an English Lady.—The London correspondent of the New York Times says:

"One of the most distinguished beauties of English society has been prematurely snatched away by death within the last few days. Lady Clementina Villiers, the second daughter of the Earl of Jersey, has been for several years the most admired and sought after of the daughters of the aristocracy. The greatest fortunes, and some of the greatest titles in the United Kingdom have been at her feet; but, as is well known, she retained her inflexible resolution not to accept any of them. Her affections were said to have been early won by a clergyman possessing but an inconsiderable benefice, and not likely by his talents to obtain a more prominent position in the Church. Her worldly and fashionable parents refused their assent to such a match; and unlike her sister, Lady Adela, who ten years ago eloped with Captain Lybottson, she continued to reside with her parents and to accompany her mother in the incessant round of society in which the old lady lives. When her brother the late member for Rochester, became so embarrassed as to be obliged to leave the country, many of his outstanding engagements were bought up by his mother, who, as the heiress of Mr. Child, the banker still possessed a remnant of her once splendid fortune. The liabilities soon exhausted Lady Jersey's personal resources; and Lady Clementina spontaneously resolved to devote many thousands of that which had been settled on herself to liquidate her brother's debts. Those who observed her gradually attenuated form and slowly-fading beauty, as year after year she returned to the joyless haunts of aristocratic frivolity and fashion, could not but perceive that, however care might succeed in preserving the lineaments of loveliness, the spirit within was perishing of 'Love's sweet want.' The last time I stood near her was at a densely-thronged assembly at one of those mansions in Piccadilly, famed for the brilliancy of its receptions. She was dressed en suite in bright blue satin, and wore upon her head, which was of an exquisitely moulded form, a wreath of roses of the same color placed perfectly horizontally, as you may sometimes see them worn by the Tyrolese peasants at their village festivals. But the gaiety of girlhood had passed away, and the ambition of womanhood had not come; and it seemed to me as often as she paused, awaiting an opening in the sometimes impenetrable crowd, her eyes acquired the abstracted look, and her statue-like form the air of immobility which belongs rather to a state of trance than to that of active life. Her eldest sister was married some years ago to Prince Nicholas Esterhazy; she lived not very happily, it is said, for about two years, and then died after a short illness. And now another is added to the series of blighted hopes with which the haughty house of Jersey has been visited."

The Shakespearean notion that love could make Queen Titania become enamored with the head of an ass, receives an occasional illustration. As one of them we have had in the police court an investigation of a case where a young girl ran off from her father with a colored man whom the wit reporter of the *Advertiser* thus describes:

"We were at some little pains yesterday to get a sight of this modern Othello who had won a second Desdemona, and found a lean, long-shanked, hobbling darkey, about fifty years of age, his white wool showing off a countenance of superlative ivory-black to a frightful advantage. In his escape from the South he received a shot in one of his legs, which adds nothing to the elegance of his locomotion, and there isn't a solitary ivory remaining to relieve the horrid chasm that yawns whenever he attempts a smile."

The lady when questioned, declared she loved the above described personage "better than all else in the world!" Her friends claim that she is insane.

STRIKE.

BY REV. RALPH HOYT.

I've a liking for this "striking,"
If we only do it well;
Firm, defiant, like a giant,
Strike!—and make the effort tell!

One another, working brother,
Let us freely now advise;
For reflection and correction
Help to make us great and wise.

Work and wages, say the sages,
Go forever hand in hand;
As the motion of an ocean,
The supply and the demand.

My advice is, strike for prices
Nobler far than sordid coin;
Strike with terror, sin and error,
And let man and master join.

Every falling, now prevailing
In the heart or in the head—
Make no clamor—take the hammer—
Drive it down—and strike it dead.

Much the chopping, lopping, propping,
Carpenter, we have told;
Ere the plummet, from the summit,
Mark our moral fabric true.

Take the measure of false pleasure;
Try each action by the square;
Strike a chalk-line for your walk-line;
Strike to keep your footsteps there!

The foundation of creation
Lies in truth's unerring laws,
Man of mortar, there's no shorter
Way to base a righteous cause.

Every builder, painter, glider,
Men of leather, men of clothes,
Each mechanic in a panic
With the way his labor goes.

Let him reason thus in season;
Strike the root of all his wrong;
Cease his quarrels, mend his morals,
And be happy, rich and strong.

REFORMING THE WOLVERINES.

CHAPTER III.

It was some weeks after the Doctor's introduction of himself before Mrs. A. could prevail on her husband to accompany her on a visit to the bride. Sometimes work was hurrying, and sometimes storms prevented, till late in December; then there came a bright pleasant morning, such a morning as will often come even in mid winter in this variable climate. It was almost as warm as a May-day; there was no snow on the ground, no cloud in the sky; the wind blew soft from the south, and the blue-jays among the willows by the brook were unusually noisy; Mrs. A. could not confine herself to the house, and Mr. A. declared that it did not seem like a working day, so both at once concluded to make the promised visit. O, it was a delightful walk they had through the dim woods that skirted the brook, and over the breezy knobs now covered with rustling leaves. They lingered by the rivulet and wandered about among the hills, scarcely wishing for other companionship than their own hearts and the sweet voices of nature about them. A turn in the path brought them, almost too soon, in sight of the Doctor's house.

There, in their little cabin, with the door close shut and a hot fire blazing, they found the reformer and his wife. The atmosphere of the room was almost stifling. The Doctor, as he opened the door to admit his guests, stepped back as if fearful of inhaling the fresh air; his hands were full of papers, but he received them cordially and introduced them to Sophia, who was truly glad to look upon one of her own sex again, for during the two months she had lived there, she had not seen a woman.

They were scarcely seated before the Doctor, who had stirred the fire to a brighter blaze and buttoned his shabby overcoat tightly around him, produced the new reform paper of which he had spoken and for which he had subscribed when he went east.

"Oh, Sir," said he, turning the paper inside out and outside in as he spoke, now holding it up to the light, and now folding it in his hands and viewing it as he would some priceless treasure; "O, Sir, if we had a few more, such reformers as the Editors of this paper, it wouldn't be long before we'd have these public lands all settled; the wilderness would soon bud and blossom like the rose. The poor houseless wretches who wander about the cities starving and begging, would all be provided with comfortable farms, and the rich landlords would be brought down to a level with the rest, and obliged to work for a living. I wish there was a law to compel every man, woman and child to work for their living; people are too proud to work. We want more energy among us! A few whole hearted reformers like the editors of this—ah—let me see; what is the name of this paper?" he said unfolding it again to look at the title; "ah, the 'Young Windmill,' that's it sir; appropriate, isn't it? chosen because their principles are free as the wind, and are to be borne to the four corners of the globe! The wind is free, you know, and why should not the land be? that's the principle they advocate. But you here can't be expected to understand the necessity of it as those do who live in cities, surrounded by paupers, and paying rents to landlords; but the Young Windmill will soon make it clear to you that the only way to reform the world is to colo-

nize the paupers on the public lands. The editors are whole souled fellows—warm in the work."

During all this and much more that the Doctor had to explain about his paper and its editors, Mrs. A. and Sophia had contrived to interchange a few words, (the room being so small as to prevent any separate conversation,) but Mr. A. had hardly found a chance to open his mouth. When they rose to depart, the Doctor expressed much regret that he had not one of his new papers to lend Mr. A., but it was only two weeks since he had received this first number, and he had not studied it quite through yet himself; he meant to be as liberal with his papers as he was with his principles, he meant to lend them to everybody, and believed if they were studied as they ought to be, he should soon have help in the great cause of reform. As yet, he said, he stood single-handed against the world; he had combated ignorance and prejudice for years without any visible signs of success, but was still undiscouraged, still determined to spend his breath for the good of the human race. When the next Young Windmill came he would lend Mr. A. the one he had now—hoped they would have a pleasant walk home; and so, with mutual invitations given and accepted to visit each other, the guests departed.

"What a husband for such a woman!" exclaimed Mr. A., while on their way home.

"How lonely and desolate she looks," said Mrs. A. "How I pitied her heated face, and how I did wish that disagreeable old chatter-box had his mouth stopped with his Young Windmill. She told me in a half whisper that he reads that tedious thing aloud to her all day, and keeps her awake nights talking about it."

Both agreed that there was something strange, if not wrong, about the ill-matched pair, and resolved if possible, to visit her when the Doctor was absent.

"Sophia," said Dr. Mystic to his wife when their guests were gone, "don't stand looking after them all day; here's a speech delivered at Albany by the Honorable Mr. Winkum in presence of the assembled Brotherhood of Universal Reformers. This is just what we want, I wish I had read it to Mr. A. I believe he will be a reformer yet, but he's rather slow; it's a new idea to him I suppose; he won't say much about it but he's more than half convinced that he's behind the age; he begins to see that a cultivated mind is worth more than money. Come, sit down and hear this speech; I've heard Mr. Winkum speak myself, he's a great man—never wants for words."

Sophia sat down and listened awhile but was very soon at the window again.

"What! is any one else coming?" asked her husband sharply.

"No; but I heard a bird sing!" said Sophia. "O, here it is! a beautiful little thing, with blue wings, a black head and white breast! It is on the fence close by, looking so tame and singing so sweetly; do let me open the door and call it in."

"No, the door has been open too much already, I can't have the cold wind blowing in, besides, the bird is wild, none of your pet canaries; you'll see hundreds of them about here in the spring."

"O, shall I!" said Sophia, wiping the perspiration from her forehead; then she began to mimic the bird, which she did so exactly that the little Phebe stopped singing, hopped about and fluttered as though it expected to see its mate. The Doctor kept on reading his speech aloud; when he had finished, he said in his cross, sputtering way,

"What's all this noise for when I'm reading? come, get supper ready as soon as possible; we've no time to trifle away in such nonsense."

"Sophia made ready the supper, and they sat down to eat.

"We have had pork and potatoes so long that I heartily wish we might have a change," said she, scarcely tasting the portion her husband dealt out to her.

"Our living costs more than twice as much as it did when I lived alone" he replied. "We have no money to be spent on nick-nacks and dainties; I thought you would be satisfied when I bought the pork?"

"I am satisfied with pork and potatoes both," said Sophia, rather pettishly, and with an equivocal glance at her husband, who did not choose to reply, but shoving back his chair he resumed his papers, saying, "I must read this article entitled, 'A plan for the removal of city paupers to the public lands, written by the traveling agent and lecturer in general for the Society of the Brotherhood of Universal Reformers.' This is the only article I haven't read, I must finish it to night and be ready for the next number of the Young Windmill which will be along in a day or two."

"When you go to town for your paper, Thomas, won't you get me a few small nails?" asked Sophia who was again looking out at the window.

"Nails! what do you want of nails?"

"O, these beautiful birds! here are two of

them! now with some small nails and a few narrow strips of board I might make a cage and catch them both. I would give more for one pet bird here than I would for a cage full in the city."

"Nonsense! don't interrupt me again with such foolery; here, now, is something interesting and improving; hear what strong arguments he uses;" and he went on reading the article aloud, stopping every now and then to make such explanations as he thought necessary to bring it down to Sophia's comprehension, while she, with an incipient rebellion rising in her heart, stopped her ears and stood silently looking at the birds.

Some days after this, as the Doctor had positively refused to get the nails, and she had no means of getting them herself, Sophia took advantage of his absence and constructed a cage after her own fashion, with such materials as she could command. With an axe she split a thin board into strips, and with wrapping twine, tied in loops at regular intervals, she contrived to fasten them together in the form of a small square pen of lattice-work furnished with a lid attached to one side by hinges of twine. A few crumbs were then scattered on a flat stump in front of the house, the little bird-pen was placed over them, a standard was put under the lid, raising it to a sufficient height for birds to enter; then one end of a long cord was tied to the standard, and the other end drawn in at the window, and there with the cord in her hand, the bird-watcher stationed herself. But the coy warblers were not to be caught so easily as she had imagined. That stump had been their favorite orchestra whenever they came forth on a sunshiny day, but now, instead of lighting upon it as usual, they fluttered about, over and around it, then one went up to the limb of a dry tree and the other settled on the fence at a safe distance from the suspicious looking cage, which they both eyed for awhile, and then, frightened either by that or the Doctor who came up the hill at the moment, they flew away and were seen no more that day.

Being now in possession of another number of his paper, the Doctor was impatient for the morrow to arrive, that he might take the previous one over to Mr. A. Sophia expressed a wish to accompany him, but he told her that if they both left home at once they would be sure to find the window broken, the chimney torn down, or half the things stolen out of the house when they came back.

She replied that those who had visited them (for by this time several of the neighboring women had called) seemed very friendly, and desired her to return their calls.

"Yes, yes," said he, "they all seem friendly enough, but there's, not one about here but what hates me bad enough to destroy everything that belongs to me."

"They are not the people to hate without a cause," said his wife resolutely.

"All the cause they have, is because I tell them they should do as they would be done by, and live like brothers; they don't like to hear the truth."

"They don't like to hear a man preach who does not practice his own precepts; I suppose they found you out sooner than I did, and for that reason know better how to treat you;" retorted Sophia, her dark eyes sparkling angrily.

The Doctor turned away, telling his wife that she did not know the Wolverines as well as he did, and that she must stay at home and take care of the house.

Sophia looked very cross and began to fondle the kitten which had climbed up into her lap.

"Pussy, you love your poor mistress, don't you?" said she; "you would not leave her alone day after day in this lonesome place."

Pussy mewed pitifully; the Doctor snatched it from her arms and threw it out of doors. "There!" cried he, "you're a woman of a great mind! making a dumb brute your equal! talking to it as though it could understand you!"

"It does understand me, and has more affection for me than you have," muttered Sophia, provoked to tears by this cruel treatment of her pet.

"If half the time you spend in talking to that squalling cat was spent in studying these papers, you would begin to know something of rational enjoyment. Life is short and every moment should be spent in cultivating the mind."

"Well, if you want to cultivate mine you may set it out in the garden next spring and cultivate it like any other weed," said Sophia as she left him to his papers and went out in search of her kitten.

A Domestic Recipe.—A father, who had passed innumerable sleepless nights, has immortalized himself by discovering a method of keeping babies quiet. The *modus operandi* is as follows:—As soon as the squaller awakes, set it up, propped by a pillow, if it cannot sit alone, and smear its fingers with thick molasses; then put half a dozen feathers into its hands, it will sit and pick the feathers from one hand to the other until it drops asleep. As soon as it wakes again, more molasses and more feathers; and in place of the nerve astounding yell, there will be silence and enjoyment unspeakable.

Household Varieties.

Death of the Sister of Robert Burns.—The youngest sister of Robert Burns, the poet and the sole surviving child of the circle of which he was the elder brother, died on Saturday morning at her cottage, near Ayr. We extract the following obituary notice in the *Ayr Observer*:

Isabella Burns, or, as she was more familiarly known, Mrs. Begg, was born at Mount Oliphant, near Ayr, on the 29th of June, 1771, and had she lived till her next birth-day would have completed her eighty-eighth year. She was the seventh child and third daughter of William Burns and Agnes Brown, the members of whose family we may mention in the order of their age:—Robert, Gilbert, Agnes, Annabella, William, John, and Isabella. About the year 1794 or 1795 she was married at Mossiel, Mauchline, to John Begg who was accidentally killed at Lesmahagow in 1813, and whom she thus survived for the long period of forty-five years. At her husband's death Mrs. Begg was left with a family of nine children, the eldest of them being only eighteen. Except an allowance of £20 per annum for three years from Mr. Vere, she had no other means of support; but, with the indefatigable spirit of a Burns, she set herself to eke out her scanty income by teaching a school at Kirkmorrhill, a small village near Lesmahagow, where she continued for three years.

Madame Ida Pfeiffer.—At the age of sixty-one, Ida Pfeiffer, the well-known traveller, departed on that journey from whence none returns in this world. In middle life, on the death of her husband and the settlement of her children, she commenced her series of tours. First to the Holy Land—whence a book. Then through Sweden, Norway, Denmark, and Ireland—thence another book. And so on for over twenty years' travel and book-making. She variously visited Brazil and Chili; Otaheite, China, Japan, and Ceylon; Southern Africa, Borneo, Sumatra, and California, Oregon, Peru, Panama, Aspinwall, and thence through the United States and Canada; lastly to Madagascar and the Mauritius and home, where she died on the 27th October, from the effects of a violent fever which she had in Madagascar.

Madame Pfeiffer was a small, very plain, active old lady when we saw her four years ago at New York. In her last book of travels she contrives to attack, in some way or other, every person who did not render her substantial aid on her travels. If ever a woman merited the appellation of Queen of the Dead-heads, it was Madame Pfeiffer. She expected to travel free of expense, and if she carried a letter of introduction to any one, without being immediately invited to make his house her home, and his purse her bank, she was pretty sure to chronicle his want of hospitality in her next book. She wrote exceedingly well, observed closely, had great recollection, and though she tells some wonderful stories—did not draw the long bow more than travellers often do. As she was two-thirds of her time on the wing, travelling at any and everybody's cost but her own, and her various books always sold largely, Madame Ida Pfeiffer must have realized a considerable amount of money. She was more than forty years old before she took up her pilgrim's staff. During the following twenty-one years she was the incarnation of feminine restlessness.—*Philadelphia Press.*

A maiden lady recently died in Maine at the age of 122. She retained her faculties until within two years, being able to see clearly to thread a needle. She was born at Cape Cod in 1736, when Washington was four years old. She was forty years old at the Declaration of Independence.

A correspondent of the *Boston Courier* tells how Daniel Webster offered himself to the woman of his choice:

"Mr. Webster married the woman he loved, and the twenty years that he lived with her brought him to the meridian of his greatness. An anecdote is current on this subject, which is not recorded in the books. Mr. Webster was becoming intimate with Miss Grace Fletcher, and at one of his visits was aiding her to unwind a skein of silk, the skein getting in a knot. Mr. Webster assisted in unraveling the snarl—then looking up to Miss Grace, he said: 'We have untied a knot; don't you think we could tie one?' Grace was a little embarrassed, said not a word, but in the course of a few minutes she tied a knot in a piece of tape and handed it to Mr. Webster. This piece of tape, the thread of his domestic joys, was found after the death of Mr. Webster, preserved as one of his most precious relics."

A Japan letter says:—The females of Nagasaki are of the ordinary height, and some of them are very handsome, and would create quite a stir in New York if they should happen that way. The married ladies are known from the single by painting their lips either green or a bright red, and their teeth a jet black. They are frequently married as young as ten.

The man who courted an investigation says it isn't half as good as courting an affectionate girl.

The indictments found against the ladies of Fredericksburg, Ohio, some time since, for destroying the liquors in the different saloons of that town, have been quashed.

Blaze-Proof Dresses.—The Medical Times says:—The melancholy accident by which the Ladies Lucy and Charlotte Bridgeman and Miss Plunkett have been such fearful sufferers, teaches a lesson which must not be neglected.—The light fabrics manufactured for ladies' dresses must be made blaze-proof. Nothing can be more simple. The most delicate white cambric handkerchief, or fleecy gauze, or the finest lace may, by soaking in a weak solution of chloride of zinc, be so protected from blaze that if held in the flame of a candle they may be reduced to tinder without blazing. Dresses so prepared might be burnt by accident without the other garments worn by the lady being injured. When poor Clara Webster was burnt we inculcated the same moral; and now the dresses of stage dancers are prepared in the same way we recommended. Why are dancing ladies of rank to be exposed to danger from which their dancing sisters by profession are protected? The hint may be put to a profitable use by some enterprising manufacturer."

A Sight Never Before Seen.—A veteran sea captain made the statement that on last Sabbath he saw such a sight as was never before seen, as he

supposed, in this or any other country—the communion service administered on board a ship of the United States Navy—the receiving ship North Carolina. He said that, in connexion with Rev. Mr. Jones and others, from the Mariners' Church he received into the same twenty-three sailors in full membership, after which the holy sacrament of the Lord's Supper was administered. It was a precious season. Five of the twenty-three were baptized; eighteen had been baptized in their infancy, showing that they were the children of pious parents. A finer set of good, intelligent-looking men we never saw. Some of them could speak several different languages, and five or six different nationalities were represented.—*Christian Intelligencer.*

A Time Saver.—A domestic economist has recently published in Philadelphia, "A Shopping Guide." This valuable work instructs ladies who are anxious to save time, and who are unwilling to make a toil of a pleasure, where they can procure everything they need at the least outlay of their time and money, and with the least fatigue. We consider this new idea a marked instance of the advance of the age, and a further recognition of those inalienable rights which belong to the sex.

Mrs. Kearsley, the wife of Major Kearsley of Detroit, died in this city on the 6th instant.—Mrs. Kearsley had lived in Detroit during the memory of the present generation, and must have witnessed its growth during the last half century.

A lady, a resident of Saginaw on Friday the last of the old year gave birth to four children at a birth—three girls and one boy, all reported healthy. We note that a member of the Legislature has proposed to donate a section of land to the mother, as a token of the service thus rendered the State.

Household Recipes.

Economical Scents.—As cheap perfumes are often required to fill little fancy bottles, such as are sold in the bazaars, toy-shops, arcades, and other places, the following receipts for their manufacture will be found of service.

1. Spirits of wine, one pint; essence of bergamot, one ounce.
2. Spirits of wine, one pint; otto of santal, one ounce.
3. Spirits of wine, one pint; otto of French lavender half an ounce; otto of bergamot, half an ounce; otto of cloves, one drachm.
4. Spirits of wine, one pint; otto of lemon grass, quarter of an ounce; essence of lemons half an ounce.
5. Spirits of wine, one pint; otto of petit grain, quarter of an ounce; otto of orange peel, one ounce.—*Piessé's Art of Perfumery.*

For Buckwheat Cakes.—I have used a number, and think the following is best: Take a convenient sized jar or dish that will hold more than is wanted for a meal, and mix at night with sour milk, letting them stand until morning; leave a little for seed, and afterwards mix with sweet milk; add saleratus the last moment before frying. In all cases where saleratus is used, I think it is much better to defer putting it in as long as possible before cooking.—*Ex.*

To Cook Fowls.—Instead of stuffing in the usual way, take three or four thin slices of salt pork and put them in alternately with the heart, gizzard and liver; then tie the wings and legs down closely, and boil in water with salt and pepper until about half an hour before serving; then have a quick oven; put it in and let it brown nicely and my word for it, you will be pleased with it.—*Ex.*

A New Broth for Strengthening the Sick.—In certain maladies (as typhus fever, for example, at particular stages), the greatest difficulty met with by the physician, lies in incomplete digestion, or inability promptly to reinforce the exhausted and bankrupt blood. To meet this difficulty LINNÉ prepared, as follows, a nutritive liquid, which has been used at Munich with the best results. Take half a lb. of perfectly fresh meat (beef or chicken), cut it in small pieces, add to it 1½ lb. of distilled (pure soft) water, with four drops of muriatic acid, and half a drachm of common salt; mix the whole well together, and after standing an hour, strain through a common hair sieve letting it pass without pressing or squeezing. The portion passing through first being cloudy, it is again poured through the sieve, and this process is repeated until it becomes perfectly clear. Upon the residue of meat remaining in the sieve, half a pound of distilled water is poured in small portions. In this manner a pound of cold extract of meat is obtained, of a red color, and pleasant meat-broth taste. It must not be heated, and is administered cold, by the cupful, according to the patient's inclination. It is difficult to make it in summer, on account of its liability to ferment and change.—Perfectly cold water must be used, and refrigeration with ice will guard against decomposition.

For our Young Friends.

Geographical Enigma.

I am composed of fourteen letters:
My 12, 11, 2, 12, is a river in the United States.
My 10, 9, 3, 1, 11, 9, 9, 7, is a town in Michigan.
My 10, 8, 6, 9, 10, is a town in Texas.
My 18, 9, 14, is a county in Georgia.
My 8, 14, 13, 5, 1, is a county in Tennessee.
My 11, 12, 8, 14, is a county in North Carolina.
My 11, 12, 4, 14, 7, 6, is a town in Michigan.
My 9, 10, 13, 12, 3, is a river in Asia.
My 9, 3, 3, 12, 12, is an island in Oceania.
My 6, 12, 5, 3, 14, is a river in France.
My 7, 14, 4, 14, 1, is a town in England.
My whole was a distinguished person in the revolution.
H. M. EVANS.

Marengo.

Enigmatical Riddle.

I am a word of seven letters.
Erase my 1, 2, 3, and I am a preposition.
Erase my 1, 2, and I am a strait.
Erase my 1, 2, 7, and I am a bird.
Erase my 4, 5, 6, 7, and transpose, and I am a nickname.
Erase my 4, 5, 6, and I am a conjunction.
My whole is a town in Massachusetts.
H. W. J.

Detroit.

Answers to Riddles in last number. The vegetable is AS-PA-RAG-US.
The name of the periodical is CIN-CIN-NAT-US, and the name of its editor is CAR-Y.
Answer to miscellaneous enigma:—COLDWATER.

